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HANDBOOK OF ARCHITECTURE

Part II

ARCHITECTURAL STYLES

Volume 4

ROMANESQUE AND GOTHIC ARCHITECTURE

Heft 4

Details of Church Architecture

By Max Hasak

Government and Building Councillor in Grunewald near Berlin

STUTTGART

1903

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Professor of Architecture

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By Max Haxel

Chapter I. General

1. Value of Details

The details of buildings for their chief charm. Secondary
 attractive to the observer, even if it be in general and as a
 whole defectively designed. On the contrary, the most spirit-
 ally designed structures may remain without charm to the eye
 excessive of beauty, by reason of bad mouldings and only foli-
 age. In spite of all this, these two chief ornaments of build-
 ings, these most difficult and yet most important ornaments
 of beauty are but little secured; they are even so little ap-
 preciated, that in the technical schools they are never taught
 at all else to the beginning architect. Can one designate
 anything more for the future architect, than by not instruct-
 ing him in it at all?

...the first principle, the building for the
 building and more follows as reflected in all their great-
 ness, and consequently nearly all buildings since the beginning
 of the 19th century are so commonly untrue to the character.
 For where would it otherwise come, that even the most original
 by statement of periods presenting this shows our attention
 it has even our acknowledgment?

Then again in vain the reasons for some notable phenomenon.
 They believe that because we stand too near them, and that in-
 stead of being able to see them from those buildings of the
 past century. But what have fifty or one hundred years of ex-
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 derstanding have as may be explained much more simply and in-
 telligently. It is the lack of beauty in details, that counts
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...that the architect learns this on the building,
 either from a skilled architect or by his own experience. It
 is only a few fortunate ones who come to such a skilled architect
 and who learn without any training and left to the

Details of Church Architecture.

By Max Hasak.

Chapter 1. General.

1. Value of Details.

The details of buildings for their chief charm. Beautiful mouldings and lust foliage may make any building pleasing and attractive to the observer, even if it be in general and as a whole defectively designed. On the contrary, the most spiritedly designed structure may remain without charm to the eye expectant of beauty, by reason of bad mouldings and ugly foliage. In spite of all this, these two chief ornaments of buildings, these most difficult and yet most important dispensers of beauty are but little studied; they are even so little appreciated, that in the technical schools they are never taught at full size to the beginning architect. Can one depreciate anything more for the future architect, than by not instructing him in it at all?!

Therefore to the great majority, the feeling for beautiful mouldings and noble foliage is neglected in all their creations, and consequently nearly all buildings since the beginning of the 19th century are so commonly uniform to the observer. For whence would it otherwise come, that even the most ordinary structure of periods preceding this arouses our attention if not even our astonishment?

Men seek in vain the reasons for this notable phenomenon. They believe that perhaps we stand too near them, and that future peoples may receive pleasure from those buildings of the past century. But what have fifty or one hundred years of existence more or less, to do with beauty itself? In the lack of time is not the solution of this both enigmatical and unpleasant phenomenon; the entire indifference in which these buildings leave us may be explained much more simply and intelligibly. It is the lack of beauty in details, that beautiful unity, that the architect has not learned, and which we therefore cannot create.

Men object, that the architect learns this on the building, either from a skilled architect or by his own experience. Indeed only a few fortunate ones come to such a skilful architect; the majority remain without this training and left to themself-

themselves; they must discover on their own account, how the moulding and the foliage is then to be drawn at natural size and to be designed, in order to have a beautiful and proper effect.

But since it is quite difficult and requires much time to train one's self in a new science, instead of receiving all that race after race has created, directly by instruction, and as little as the individual succeeds in this, it is just the same with self-training in the details of buildings.

To create the necessary and proper regard again for these details, to insist on the most diligent use thereof, to make room for them, to set them in places belonging to them, particularly in one of the most prominent places in art creations, that is the purpose of this Part. Since the details of mediæval art are treated here, then will the representation of Gothic details exhibit the ground principle of suitability as the unfailing means in a still higher degree, than the descriptions of the ground plan and elevation, together with the sections etc. have already shown, in order to transform the old and to create masterly new things.

The transformation of the existing for a different purpose in a reasonable way can of itself create the new; this alone makes the artist master of the art; this alone gives expression to his nature in art. The superstitious imitation of the art of past ages makes the artist the slave of art, the bondman of an art foreign to his thought, that does not solve existing problems, and which opposes its petrified details and its sacred leaves to him everywhere as a hindrance.

2. Bötticher's Theory of Architecture.

Bötticher,¹ one of the most amiable observers of Grecian art, believed that he had found the way in the theory established by him, which the Greeks followed in the creation of their ornament as well as the details of their temples, and he hoped to succeed in passing to new forms. Bötticher had discovered that a meaning must lie as a basis for the details of architecture, that their existence did not result from mere chance and the need of ornamentation, and that their nature must proceed from the nature of the building.

Note 1. See Bötticher, G. Die Tektonik der Hellenen. 1874.

"The form of the body reflects its nature;

hence if, you loose the soul of the trible."

This says a scientific inquiry, where is the Acropolis, really? The work was not present to the observer through and doubt; the desire must express no mysterious language. The art work and the details must of itself exist upon the observer; it must directly influence his spirit and not merely receive the form. It is of course in seeing it, so that he may understand the nature of that part of the building, what the architect desired to say and how he has arranged everything. And is creation? For the form; science is creation for the understanding. An

concerns no great artistic idea but merely a scientific one, that it is entirely a mistake to hope for a picture in art. Creation by this grand principle, this has already been proved by the discovery of it. Had the Greek forms been in accordance with the architect's conception of true art form, i.e., just such forms, which would directly tell the feeling and the eye for what purpose they existed, then would this have been seen by all before Hellenism, and every one with an artistic eye would have been able to see it. But since Hellenism's explanation of form contains no scientific of feeling but merely a scientific of the understanding as about the artistic view of the artist, that as the essential purpose of that part of the building to achieve, then this idea cannot be placed as a basis for art creation; therefore it has also produced no new art forms. Had

the ancient Greek actually understood and expressed in accordance with the Greek idea the forms transmitted to them, this would have been a real explanation for their appearance to some extent in a fixed style.

It is to be seen that Hellenism's explanation of Greek forms is -- I cannot personally free myself from it -- and the saying: "The form of the body reflects its nature," is contradicted in explanation, as Hellenism and science is. These Greek forms are phenomena, according to

"The form of the body reflects its nature;

Pierce it, you loose the seal of the riddle."

This saying sounds invitingly; where is the 'Achilles' heel? The art work must not present to the observer thought and doubt; its details must express no mysterious language. The art work and its details must of itself seize upon the observer; it must directly influence his spirit and not merely require the results of thought in seeing it, so that he may understand the purpose of that part of the building, what the architect desired to say and how he has arranged everything. Art is creation for feeling; science is creation for the understanding. An art work therefore is grasped by feeling, a scientific work by the understanding.

That Bötticher's explanation of the forms of Grecian details contains no basal artistic idea but merely a scientific one, that it is entirely a mistake to hope for or produce an art creation by this grand principle, this has already been proved by the dispute over it. Had the Grecian forms been in accordance with Bötticher's conception of true art forms, i.e., just such forms, which would directly tell the feeling and the eye for what purpose they existed, then would this have been seen by all before Bötticher, and every one with and after Bötticher would have beheld it. But since Bötticher's explanation of forms requires no stability of feeling but merely a stability of the understanding to adopt the artistic views of the architect as the statical purpose of that part of the building requires, then this idea cannot be placed as a basis for art creation; therefore it has also produced no new art forms. Had the ancient Greeks actually transformed and separated in accordance with this ground idea the forms transmitted to them, this might perhaps afford an explanation for their adherence to some forms for a thousand years, so that thereby they became fixed in a blind alley.

It is to be added, that however attractive Bötticher's explanation of Grecian forms is -- I cannot personally free myself from it -- that the saying:-- "the form of the body reflects its nature," is contradicted in application, as Bötticher understands it. These Grecian forms are agreements, according to his views. But the proverb is just; every agreement limps.

These arguments are like the arguments of the prisoner before the judges of the Holy Scriptures and the pages of a Bible. They are mostly produced by violence. For a beam to be covered by the form of band, some tension occurs in its body and these bands offer special resistance to tension, resistance such a developed course of ideas and is so far lessened, that even this stage says nothing to the observer -- one must first solve the riddle.

For the band presents an image at least, that is not wholly rolling up of the band would be marked the artistic solution for the ending. But that now the idea of the band as a projecting body no longer has any sense is directly true. The form of the body no longer reflects its nature. Still less, if this band artistically terminates against the wall by a second overhang. To sustain two corners against each other is

... is the principle of the building. It is the principle of the building, so that one must there employ an open joint. Nothing with reserved corners, does not correspond to the purpose of the cornice on the building; since one should must not have a joint with an open joint. But if such a joint be exhibited in a corner and especially located, then is the Corinthian capital with its not at all reserved joint, as a capital, for the building is not

... is the principle of the building. It is the principle of the building, so that one must there employ an open joint. Nothing with reserved corners, does not correspond to the purpose of the cornice on the building; since one should must not have a joint with an open joint. But if such a joint be exhibited in a corner and especially located, then is the Corinthian capital with its not at all reserved joint, as a capital, for the building is not

In order, it is not once possible to find such an architectural

These agreements are like the agreements of the preacher between the passages of the Holy Scriptures and the parts of a building, that are mostly produced by violence. For a beam to be covered by the forms of bands, since tension occurs in its bottom and these bands offer special resistance to tension, requires such a developed course of ideas and is so far fetched, that even this image says nothing to the observer -- one must first solve the riddle.

But the band presents an image at least, that is not wholly erroneous. If one projects the beam beyond the wall, then the rolling up of the band would be indeed the artistic solution for its ending. But that now the idea of the band as a projecting body no longer has any sense is directly true. The form of the body no longer reflects its nature. Still less, if this band artistically terminates against the wall by a second curvature. To stiffen two points against each other is entirely a mistake.

That further a cornice is the particular course where compression appears, so that one must there employ an ogee leaf moulding with recurved points, does not correspond to the purpose of the cornice on the building; since one should much sooner furnish each bed joint with an ogee leaf moulding. But if such pressure be exhibited in a course not especially loaded, then is the Corinthian capital with its not at all recurved leaves an entirely faulty idea; for the greatest load is certainly transmitted to the capital.

Bötticher's school believed, that the sole result from this principle -- the curved round -- had been found as an idea for the arch, and it proudly looked down on the Romans with their "archivolt." But whether one curves a beam or a round moulding, it must come to pretty much the same result; neither shows the nature of the arch. If the arch be cut through, its separate parts fall downwards; but if the round be cut, its two portions then pass upward and outward. Moreover this was no especially new discovery; Romanesque art had already very frequently employed such bent plant stems for decorating the rounds of its doorways.

4 In brief, it is not once possible to find such enigmatical representations, that make apparent the actual statical purpo-

conscious of the parts of the structure, not to mention that such structures and such forms would directly convey to the

the

This saying from Hegel's *Esthetics* may be disclosed only in the following sense as an inexhaustible fountain of new forms:—"The form of the body reflects its nature." That this saying has made the mind see victoriously over government is the unconscious strength; that is its innermost secret; this places the truth as at the apex of all periods of artistic forms. There is for that inexhaustible fountain of youth, even though it is a new form, all tendencies of the modern period would remain a worldly existence grasping for non-existent things—no more. Instead of sound creations of artists and poets, the world would be a mere collection of things and ideas without any intellectual reason.

2. Hegel's Theory of Architecture

Hegel's theory of architecture is not only a theory of form between form and content of architectural parts, so far as already stated, the essence of the part of the structure be content and illustrated by the art form, so that Hegel in his "Art",⁸ where he most strongly opposed the theory of Esthetics, simply denies any relation between the form and the of the architectural part. He has thereby explained all art forms and has declared, that man built walls, gates and ceilings of any material, such as wood, clay, bricks etc., entirely formless and without any relation to the form of the structure. This is the theory of Hegel's architecture and is-

Note 8. See Hegel, G. *Der Geist in der Architektur* and *Esthetics* (Berlin, 1828).
Hegel's theory of architecture is not only a theory of form between form and content of architectural parts, so far as already stated, the essence of the part of the structure be content and illustrated by the art form, so that Hegel in his "Art",⁸ where he most strongly opposed the theory of Esthetics, simply denies any relation between the form and the of the architectural part. He has thereby explained all art forms and has declared, that man built walls, gates and ceilings of any material, such as wood, clay, bricks etc., entirely formless and without any relation to the form of the structure. This is the theory of Hegel's architecture and is-

purposes of the parts of the structure, not to mention that such procedures and such forms should directly convey to the eye just what the structural part does and what the architect intended.

This saying from Bötticher's *Tektonik* may be disclosed only in the mediaeval sense as an inexhaustible fountain of new forms:-- "The form of the body reflects its nature." That this saying has made the middle ages victorious over government is its unconquerable strength, that is its immortal merit; this places the middle ages at the apex of all periods of architecture. Except for that inexhaustible fountain of youth, ever spouting forth new things, all tendencies of the modern period would remain a wildly capricious grasping for non-existent ideas -- nothing further. Instead of sound creations of spirits endowed with reason would occur the wild groping around and distortion without any intelligible reason.

3. Semper's Theory of Architecture.

While Bötticher justly seeks and requires reasonable relations between form and purpose of structural parts, so that as already stated, the purpose of the part of the structure be represented and indicated by the art form, so has Semper in his "*Stil*",² wherein he most strongly opposed the theory of Bötticher, simply denies any relation between the form and use of the structural part. He has thereby explained all art forms and has deduced, that man built walls, piers and ceilings of any material, such as wood, clay, bricks etc., entirely formless in order to then cover them with hangings, gold plates and costly woods.

Note 2. See Semper, G. Der Stil in den technischen und tektonischen Künsten. Munich. 1860-1863.

Had Semper stopped there, one might admit that this might be perhaps an acceptable theory, although such theories are always more or less supported historical romances; but Semper proposed this procedure as the only correct and artistic one. On the other hand, one cannot protest against it too decidedly.

Semper in fact asserts, that architecture is merely an art of covering! Thereby is all organic development of architecture barred and made impossible. But thereby is also the way closed to truthful architecture and deception is declared as

alone justifiable; therefore all architectural forms depend on chance and on caprice; they hang in the air. The explanation of Semper then properly corresponds only to those buildings, that exhibit internal and external surfaces at pleasure, which result from no need, from no construction, from no material, from no intellectual reflection, that only somewhere repeat capriciously something seen elsewhere, a deception in forms, which can only be made stable by the engineer and only by toilsome and compulsory steel construction, whose vaults are feigned in Rabitz or Monier concrete (reinforced); if not entirely in papier mache. That is no architecture, that is the art of the decorator and upholsterer, the permanent imitated for the temporary purpose.

Semper's, Bötticher's and the mediaeval theories concerning the creation of art forms represent three successive and ever more highly developed architectural activities, the first or second of which can no longer be followed without passing to a lower level in architectural creation. Why should the god-like Hellenes alone have anticipated everything? Why should they have at once stood on the highest pinnacle of human creation? Why should there be allowed and possible to us later born men nothing but imitation, puerile faltering after sacred and never to be excelled creations? Furthermore, we yet see, that the Greeks have been surpassed in so many other fields of human creation by succeeding races, even by our contemporaries -- the engineers.--Not by imitation does man equal his teacher or excel him; by such imitation one at most gives himself up to derision. From his own self must the individual artist create for the modern period.

In the royal palaces and the houses of the wealthy, the walls may well have been hung with tapestries and fabrics, thereby being adorned and improved; yet this wall covering prevailed throughout the entire middle ages even in the cells of the monks. Wooden posts and wooden beams may indeed have been ornamented with wrought metal, and thus may the decorations of tapestries and fabrics, of weaving and embroidery, have been adopted on the wall surfaces and have formed friezes and bands thereon, and thus also the art of chasing in the noble metals may have contributed its own part to the original treasury of

the forms of architecture -- all this is conceivable and acceptable. But even if the primitive forms of architecture originated in this manner, it is not thereby proved, that architectural forms must arise in that way, and that forms having a different basis of origin -- particularly this and that industry -- has produced art forms for architectural parts.

The art form in itself proceeds from other grounds and must result from other bases. What Semper regards as the original basis of the art forms of architectural details produces only ornaments for the greater decoration and higher splendor of certain architectural parts. In brief, Semper's "Stil" affords an explanation for a great number of antique unintelligible detail forms of architectural but no formative principle of architectural forms in themselves.

One may retain this theory of antique forms for mere ornamentation, since to all peoples and ages such ornament and decoration are common. But ornamentation is not formation. Semper's explanation of architectural forms takes a part for the whole.

In like manner is it with Bötticher's explanation of antique forms. This likewise takes a part for the whole, though a different part of architectural creation than that, which fell to Semper.

4. Circle of Forms of Egyptian Architecture.

While Semper assumes, that the crude form is concealed beneath the ornamental tapestries and that sheet gold and is never exposed at all, a procedure that may have occurred as stated, we see the Egyptians evidently risk a step forward and transform these crude forms into natural forms. The column receives as its head a lotus bud or flower; the shaft of the column is treated as a lotus stem and the base as a lower lotus bud. The uppermost cornice is represented as a crowning row of leaves fastened by a rope of bast. Instead of the purely physical labor of hanging or covering, there now appears in activity the permanent spirit. But to it is still lacking for the form treatment a principle derived from the building itself. Still is architectural creation an imitation of similar natural things, not a creation of new phenomena. Man desires to construct an enclosure of lotus flowers. He models the crude form as according to his model in the plant.

But they have not merely adopted the chiefly natural forms of the Egyptians; in their treasury of form are mingled the forms of the native East and throughout also all of Semitic original forms of weaving, embroidery, metal work and pottery. Yet the factor are in part intelligible to the Greeks. Under their master hands during centuries, the still natural leaves of the Egyptians and all other ornamental forms, that the Egyptians of the Orient have created, were developed into ever more beautiful and refined. These are the "conventional" ornaments and architectural forms of the Greeks. With the rising of these refined forms into classical beauty, the Greeks then appear to have suddenly employed the depressed leaf, the combination of straight lines and cords, volutes etc. in the reasoning manner of Egyptian art. It is not that the Greeks have seen Egyptian art, but that Egyptian art has seen the Greeks.

Originated in this manner, if one knows neither their origin nor the history of their existence; then it is self-evident that the Greeks are the only (human) forms; and that still have not become these intelligible forms to those who have not seen them. But if one accepts, that the Greek architectural forms originated by the transformation of transmitted forms, which were partly taken from the art of the Orient, partly from the Egyptian monumental art of the East, into a linear enclosure, then one can indeed properly regard as good reason therefore for a new art creation. -- It is a treasury of forms which one their origin more or less to accept.

The Greeks first discovered a basal principle for the creation of architectural forms, and it produced a new art of the linear application. The crude form was neither covered nor left in the state of natural growth, but it was made, precisely defined. The crude form is shown as may be necessary, according with the tools corresponding to the material and enclosed by the aid of geometrical lines. It greater splendor is

6 5. Transformation by the Greeks.

The Greeks are then evidently the pupils of the Egyptians. But they have not merely adopted the clearly natural forms of the Egyptians; in their treasury of form are mingled the forms of the entire East and therewith also all of Semper's original forms of weaving, embroidery, metal work and pottery. Yet the latter are in part unintelligible to the Greeks. Under their master hands during centuries, the stiff natural leaves of the Egyptians and all other ornamental forms, that the industries of the Orient have created, were developed into ever more beautiful outlines. These are the "conventional" ornaments and architectural forms of the Greeks. With the ripening of transmitted forms into classical beauty, the Greeks then appear to have actually employed the depressed leaf ogee, the combination of plaited thongs and cords, volutes etc. in the reasoning manner on suitable places, even if not in the perfected sequence of ideas, that Bötticher has seen therein.

If one will not grant that the Grecoan architectural forms originated in this manner, if one knows neither their origin not the ground of their existence; then it is self-evident that one cannot maintain, that they are the only justifiable forms; one should still less now require these unintelligible forms to alone be imitated evermore. But if one accepts, that the Grecian architectural forms originated by the transformation of transmitted forms, which were partly taken from the art covering of oriental interiors, partly from the Egyptian remodeling of the temple into a latus enclosure, then can one indeed properly deduce no good ideas therefrom for a new art creation! -- It is a treasury of forms which owe their origin more or less to accident.

6. Gothic Basal Principles for the Treatment of Architectural Forms.

The Gothic first discovered a basal principle for the creation of architectural forms, and it produced a new art by its unerring application. The crude form was neither covered nor enclosed in the shape of anything symbolic, but it was appropriately shaped. The crude form is shown as may be necessary, wrought with the tools corresponding to the material and enclosed by the aid of geometrical lines. If greater splendor is

developed, then the foliage of nature and the beasts of the fields are placed on the surfaces of the ashlar.

Let us consider the origin of the Gothic window as an illustration of proper development. That required is the opening in the wall. If this be narrow and a horizontal termination be necessary, one stone, a lintel, is laid over it; otherwise an arch is turned above the opening. Since the window is constructed to look out on the one hand, to admit light on the other, then is it serviceable for both purposes and necessary to splay the sides or jambs. One also thereby secures the advantage, that the obtuse angles thereby produced are less easily injured than the more acute ones of the right angle. The last advantage already permits the addition of a chamfer, of a cavetto or of a round on the angles of the jamb. The great splay also allows treatment by hollows and rounds (thus by means of geometrical forms), richer for light and shade, and natural foliage gives the highest ornamentation to these hollows. Thus the Gothic windows naturally originated from the requirements, and so may likewise today new vestures originate under new hands. The development of the surfaces proceeds naturally along the straight lintel or the arch; by the splaying of these more light falls into the interior and a freer outlook from them is obtained. But the richer ornamentation by means of hollows, rounds or foliage similarly extends around the unified enclosure with justice.

To carry off the water is required in the fourth place a suitable slope of the window sill, under this being a drip moulding. No greater fault can be found, than to construct windows without drip mouldings beneath them; the entire wall under the window is "soaked" irretrievably.

This is the form of the Gothic window, that originated from the requirements and the construction in the hands of an artist.

Let us further consider the form of a corbel in order to make clear the mediaeval ground idea of the creation of structural forms. A projecting stone is required. If its under surface were curved in parabolic form, this would correspond to the static requirements. Thus if the lower angle be removed by a chamfer, a cavetto or a quadrant, then the function of a corbel is most carefully considered. These are actually the forms of

mediaeval corbels. That for greater richness the removal of the superfluous mass then follows geometrical lines, which exhibit to the eye light and shade in artistic distribution, or that the superfluous stone be employed in producing ornamental foliage and graceful heads, corresponds to the need of mankind for ornamentation. This innate requirement of ornamentation is the primitive basis of all art in building.

Now we commence in orderly sequence the description of mediaeval details and first of all watch the architects of the Gothic in the appropriate development and transformation of the same. We will first examine the walls.

.. Conservation and Education.

7. Out Stone.

Chapter 8. Walls.

a. Construction and Execution.

7. Cut Stone.

As frequently stated, the middle ages took the method of construction and the material of the parts of the building as the starting point for their artistic treatment, and so likewise for the wall.

Cut stone was the noblest material. Whenever available, the external and internal surfaces of the walls in churches were constructed of cut stone. The middle of the wall was usually not the portion best executed, but it was constructed of a kind of concrete of small stones and mortar. Since in the middle ages the transportation of the rough sandstone was indeed more costly than today, it was economized as much as possible. From each rough stone was wrought the largest possible ashlar or piece of moulding. Therefore, for example, the pieces of moulding are nearly all of different lengths, jamb stones are of various heights and bond differently in the side surfaces, etc. Accordingly the wall was also not composed of courses of equal height, but high and low stones were set beside each other, and men only sought to level up again after two or three courses, in order to obtain a continuous horizontal joint. How happy is the effect of a wall so treated must be incontestable. Moreover the mediaeval architects proceeded variously; one also finds numerous buildings with courses carried along regularly. The joints during the Romanesque period are usually thinner than during the Gothic. The joints were filled with mortar and thus have a bold effect.

8. Joints.

Then the middle ages set the dressed ashlar in a bed of mortar and did not "grout" them, as so commonly occurs today. The setting in a full bed of mortar as a horizontal bed joint has every advantage in itself. The open setting of the ashlar on bits of tarboard, wooden wedges or strips of lead, and the pouring in of thin mortar afterwards has every disadvantage in itself. The injury almost invariably repeated is, that perfect filling is almost impossible and more or less hollow spaces always remain. Therefore the stone rests on but a small area. This latter is too heavily loaded and so the stone breaks. But

But commonly the ashlar only rests on four bits of tarboard, since the grouted mortar cannot in, and it accordingly receives no pressure from the ashlar above it. A proper bed of mortar requires a thickness of at least 0.59 inch, and from this result the thick Gothic bed joints. But the end joints were likewise made as thick as the bed joints in the middle ages, since they also were not grouted afterwards. Only the freely projecting pieces of moulding were set as closely together as possible, since the mortar would otherwise have been washed out by rain.

The modern close end joints avenge themselves, especially when sandstone and granite expand when wet (?). Since on account of their small thickness the joints cannot be compressed, the stones press against each other or against the larger grains of sand in the mortar and so flake off.

9. Mortar.

As a cementing material, mortar of white lime, gray lime (hydraulic lime) or trass is preferable, but cement is most objectionable. One everywhere hears the objection, that lime mortar is too soft and endures too little compression to support heavily loaded parts, such as the shafts of columns and piers, which are perhaps intended for 426.7 to 568.9 lbs. per sq. inch. This notion is entirely incorrect. Since the mortar cannot squeeze out of the joint, it is strongly compressed and thereby acquires the necessary resistance. But on account of the lack of elasticity of cement and its containing chemical salts, it is the worst material for setting sandstone or granite. Equally bad is it for facing with bricks, since generally all masonry above ground is sometimes wet and sometimes dry. Therefore in cement joints or cement masonry, the ashlar like bricks crack the joints. In brief, the thick mediaeval joints in lime mortar are technically the most proper and are actually very beautiful.

10. Internal Surfaces of Walls.

In the interior, whose surfaces were indeed likewise constructed of cut stone, the material does not usually appear, but only surfaces, vaults and all mouldings, painted in strong but harmonious colors. Horizontal and vertical joints were drawn on the surface in regular arrangement. But on the contrary in

brick churches, it was evidently regarded as the greatest richness to construct not merely the exterior but also the interior in brickwork and not plastered.

11. External Surfaces of the Stones.

In many regions, the visible faces of cut stones were not wrought smooth, but the quarry bosses were left on the faces. The angles of houses and of towers are usually so treated. These bosses are predecessors of those of the Italian Renaissance.

9 Yet the middle ages never employed them to accent thereby the unity of the effect of the surfaces, and to emphasize the effect of the separate stones. The bosses at the angles are also as long as the different stones permitted, without a regular alternation, which the Renaissance gave later.

The surfaces of brickwork in the richer treatment were arranged in patterns with glazed bricks in the most varied subdivision. The scaffold holes were usually left open and in regular arrangement, without filling them after removal of the scaffold. This procedure is especially found in Silesia.

For cut stones, that were set with a kind of tongs, which required a small hole in the front and rear sides, this hole remained visible, even if filled with mortar. Where this cut stone facing shows very irregular hooked joints and the like, the external surface was yet certainly intended for coloring. The entire surface was colored and regular joints were drawn thereon.

12. Quality of the Stone.

Men have been of the opinion, that the middle ages possessed particular knowledge of the qualities of the stone or worked particular quarries, that perhaps were used since the Roman period. Nothing can be more erroneous than this. For one kind of rock, the good stone lies above, for another in the middle of the rock, while in a third quarry it is at the bottom. This changes at a distance of a few miles. If a good ledge exists in front, this ends in the same quarry after some 100 or 1000 yards. Thus if a people possessed a good quarry ledge, then this was usually denied to their successors. Men opened new quarries anywhere during the middle ages, as the documents state. For example, if the Cistercians of Walkenried desired to construct their church and monastic buildings in stone, no

Roman quarry was at their command. They acquired or received authority to work a stone quarry in the neighboring Widagerode. That this quarry supplied excellent stone is proved by the remains. -- On the contrary the tracery was much weathered, very much in its lower parts, and which was again restored in the cloister perhaps twenty years since.

Since the document, in which Count Burchard von Lauterberg transferred a stone quarry to the Monastery of Walkenried, is worth reading in more than one respect, it is here given.

Note 3. See Urkundenbuch des historisches Verein für Niedersachsen. Heft 1. p. 218. Hanover. 1846.

10 "Burchard, Count von Lauterberg and his children, Otto, Heidenreich, Werner, Heinrich, to all for all time, who see this letter.

Since we should love the embellishment of the House of the Lord, and it is useful to us to apply ourselves zealously to the building of churches and monasteries, as proper for Christians, so we will it to be known, that we have transferred to the lord abbot and the convent for building their monastery, the quarry in Widagerode in which the stone has heretofore been quarried for building their monastery in Walkenried, at the command and with the consent of our ancestors, with full rights in the length, in the breadth and the depth, as the stone may be found, so that they may use the quarry and the stone, as may seem necessary to them. To whom it may also not be objected, that any knight, citizen, peasant or rural laborer may say by right in fee, contract for purchase or exchange, that any fields belong to him, since our ancestors and we always willed and do will, that the said quarry in its length, breadth and depth be assured and conveyed to the use of the Walkenried Monastery. This we promise on our honor, that neither we nor ours will in any wise hinder, neither wagons nor horses, nor laborers working in the quarry, yes, we will resist according to our powers those hindering, and will afford protection for this quarry to them, namely to the lord abbot and the convent.

Given and done in the year of our Lord 1256, on the 4 th of the calends of March."

18. Durability and Coating.

The excellent preservation of mediaeval stone is evidently

due to their coating. Like varnish, as egg and casein colors form insoluble compounds with soluble silicic acid and thus make a hard surface not injured by weather. If the coloring has itself disappeared, this skin further protects the stone. Therefore it is highly objectionable to "work over" the churches today in respect to their protective coating, in order to make them "beautiful" for a few months. They then weather very strongly.

In the middle ages, men ascribed to the moon the strong weathering, especially on the south sides of churches, since this side was covered by its light during the night. Hence it is entirely an error, if one thinks that the cathedral is so much more plainly treated on the north side, because it is the weather side. The reason for this is to be sought in the location of the cathedral itself, where the north side was scarcely seen on high above the city moat, while its south side was turned toward the archbishop's palace and the city traffic.

The southern sides actually weather much more rapidly than the "weather sides", not on account of moonshine, but since the external surfaces of the stone on the southern side must pass through a difference of temperature of 36° to 54° from the noonday heat to the cold near midnight, and its particles are thus strongly affected, while this is not the case on the north side.

It is advisable today to cut the finished ashlar at the quarry itself, while the stone is still saturated. For this quarry moisture generally contains silicic acid or silicate salts in solution, which are deposited on the surface during the gradual drying. The evaporating quarry moisture generally produces these salts on the surface, which thus becomes strongly saturated.

All washes, window sills, inclines on buttresses, walks, stepped offsets, must then be saturated with varnish, or if not visible, covered with metal; for all falling moisture sinks into the stone, and thus is saturated the entire masonry lying beneath such inclined or sloping surfaces.

The middle ages likewise coated such walks with mastic or covered them with lead.

// b. Plinth of Wall.

14. Problem.

These structural parts on which everything in the building rests are the plinth of the wall and the bases of the columns and other free supports. The latter will be discussed in Chapter 3 (under a; bases of columns); the former are to be considered here.

The harder material permits a smaller cross section; the softer requires a larger cross section for the same load. For this reason, no wall or column, in the dimensions required for them, should be set directly on the ground, since the ground cannot be loaded with more than 5126 lbs. per sq. foot without being compressed, while the softest material for masonry already bears twice or thrice as much load. For example, just as little can one set a granite shaft on ordinary brickwork. Consequently an intermediate must be inserted between the softer and the harder material, that receives on its top the smaller cross section of the wall or column shaft, while it possesses at its bottom the larger cross section of the softer material. This intermediate piece must always be made of the harder material, since its smallest cross section must support the load transmitted to the harder material.

15. Form Treatment.

In Romanesque as in Early Gothic art, there is employed as the richest plinth the base of the column (See Chap. 3 under a). It usually rests on other courses, that project yet further by means of cavettos or a wash. Thus the Romanesque buildings of Cologne exhibit massive plinth mouldings. There is found in Stadthof opposite Regensburg a splendid early Gothic plinth with base profile on the Hospital Chapel, and similarly on the Church at Hitzzenach near Boppard (Fig. 1) ⁴; this is shown by the High Gothic nave of Halberstadt Cathedral, transformed in the most beautiful manner. Only the very poorest structures omit this most effective and necessary decoration and are satisfied with a simple wash. If the site be inclined, the middle ages raised its plinth moulding by vertical turns. It was usually retained around the doorways; so particularly in Romanesque and early Gothic art. Likewise in the interior, for example in the choir aisle of Magdeburg Cathedral, the architect executed the plinth in a masterly way, as the circumstan-

circumstances required. The middle ages show themselves everywhere masters of forms and not slaves of consecrated, unintelligible and restricting traditions.

Note 4. From Dehio & von Bezold. Die Kirchliche Baukunst des Abendlandes etc. Stuttgart. 1884 et seq.)

c. Principal Cornices.

16. Romanesque Forms.

The cornice that terminates the upper part of a wall serves to end this wall artistically, to crown it, or to produce the necessary bearing for the roof and rain gutter. While the Egyptian cavetto with its rows of vertical leaves in that rainless country and on the roofless temple only expresses the crowning, the Grecian main cornice emphasizes its purpose as the supporter of the roof gutter and as a bearer of the rafters of the roof.

Romanesque art chiefly seeks to obtain a greater area at top by an arched frieze and corbels. These corbels exhibit in tireless variation the most diverse sculptured forms, such as heads of men and animals, at a very small scale, so that their details are scarcely apparent. A pleasing exception is formed by the choir of Königsalter (about 1138); there the eyes of the heads are even set with colored glass enamels. The main cornice of S. Sernin at Toulouse is illustrated in Fig. 2⁵ and shows a different treatment of form; the brickwork native in those provinces plainly produced this charming cornice.

5. From Viollet-le-Duc, E. Dictionnaire Raisonné de l'Architecture Française. Vol. 2. p. 201. Paris. 1867.

17. Form during Transition.

At the time of the transition occurs beneath the main cornice a form of corbel, that appears quite foreign, but is derived from Burgundy and Champagne and came to Germany with the earliest Gothic of the cistercian monasteries. We see it on the principal cornice above the bishop's passage to Magdeburg Cathedral and on the cloister of S. Matthias at Treves. Fig. 3⁶ represents the usual French form together with the starter of the gable, which is arranged in a both simple and intelligible manner.

6. From the same. Vol. 7. p. 137.

18. Gothic Forms.

18. Gothic Forms.

The Gothic also constructs principal cornices with corbels, but chiefly by means of projecting courses. If corbels are employed, they stand at such distances as are required by the slabs laid on them, that have to support the gutter or are themselves hollowed out as gutters, not as prescribed by any introduced scheme without regard to the requirement. This is already shown by the illustrated main cornice of Notre Dame du Port at Clermont (Fig. 4⁷). Like most in Romanesque art, the details are just as intelligible as those of the antique; thence results the contrast producing indeed these singular forms of corbels. Viollet-le-Duc sees therein the self-curving wooden shavings, when the carpenter dresses the ends of the beams with the axe; others take these corbels to be a transformation of the antique consoles with their scrolls. Yet must the series of these little volutes recall most the Early Christian plum and angular flowers, whose reappearance we see at about the same time on the high altar of S. Ambrogio at Milan.

Note 7. From the same. Vol. 4. p. 322.

In the developed Gothic, the principal cornice is almost always composed of projected courses, the lower one of these being made a cove with rich ornamentation by leaves, and the upper bearing the wash. These cornices are mostly not high (1.64 to 2.30 ft) but project strongly, thereby forming an effective crowning.

19. Balustrade.

A balustrade above the upper course generally encloses a walk for convenient passage, from which the roof and gutter may be carefully examined. These balustrades are almost invariably furnished with most charming tracery panels. For the necessary security, larger posts usually stand on the piers, that are in turn crowned by finials, animals or statues. Fig. 5⁸ represents such a balustrade with its post from the choir of Magdeburg Cathedral and of the first half of the 13th century. In order to prevent the lower ends of the rafters and the woodwork from being injured by water from a leaky gutter, a small wall rises behind this balustrade and the gutter, on which is set first the framework of the roof.

Note 8. From Clemens, Mellin & Rosenthal. Der Dom zur Magde-

Magdeburg. Magdeburg. 1831 - 1838.

20. Removal of Water.

The water is conducted from the gutter either through downspouts or through gargoyles. Let us follow the course of the rainwater from the roof of the clearstory. This falls from the rain gutter through the projecting finial at each pier upon the top of the flying buttress. An animal at the bottom spouts the water on the top of the arch. This may be seen on the nave of the Cathedral at Amiens (about 1235). According to Viollet-le-Duc, before the construction of the roof, these gargoyles served to discharge the water from the spandrels of the vaults. (Fig. 6⁹). The water runs from thence to the outermost finial, to again pass within the pier down to the main cornice of the side aisles. In good construction, metal pipes are inserted in these openings or channels. From the rain gutters of the side aisles the water passes outward and downward through great gargoyles. These gargoyles have afforded opportunity for the most charming creations in foliage, bodies of animals and of men. They are the favorite motives of the "stone-cutter's jests." Yet they are always designed with spirit, and if they become wild and fabulous beings in late Gothic, still they are never like the bad artizan's impossibilities of modern churches. Fig. 7¹⁰ is from the choir of Cologne Cathedral and Fig. 8¹¹ is from the Cathedral at Prague; both emphasize the grotesque more than the beautiful. The French creations mostly stand on a much higher plane of artistic perfection.

Note 9. From Viollet-le-Duc. Same. Vol. 6. p. 24.

Note 10. From Schmitz, F. Der Dom zu Cöln etc. Düsseldorf. 1877.

Note 11. From Essenwein's drawing.

21. Diversity.

Belt courses either have merely the formal purpose of subdividing and of animating the plain wall; but they must then occupy a reasonable position, i.e., be arranged where the floors of the stories or of the galleries lie behind them. Or they are placed beneath the windows in order to carry off the water. While in the first case the treatment of these belts is not dominated by any grounds of propriety and therefore more or less room is left to caprice or to tradition, in the second

kind of belt course occurs the imperative necessity of removing the water from the wall beneath, allowing it to drop off, and which in great quantities runs down from the impermeable glass in the windows.

22. Subdividing Belt Courses.

Let us first consider the belt courses, which in both the interior and on the exterior merely have the purpose of subdividing the wall. First of all since the Roman period is formed a dividing belt course above the lower arcades in the main aisles of churches, that is arranged at about the height of the horizontal roof beams of the side aisles or of the floors of the galleries. It naturally at first represented the antique main cornice, which then in the Early Christian period was transformed more and more, to appear in Romanesque and merely as an actual band moulding, that is ornamented by a chess-board pattern, as in S. Michael at Hildesheim, or by rich scrolls, as in S. Andreas at Cologne, or by a plaited band, as in the Liebfrauen Church at Magdeburg.

In the Gothic period, these members were formed with rounds or coves, indeed even beset with foliage. That of this kind best known is the belt course extending above the arcades in the cathedral of Amiens; it has graceful and lush foliage of the early Gothic type. When one employs in such places in modern churches belts with washes and water drips, then is such a belt in a false position, and furthermore such a water drip in the interior has little artistic effect.

/6 23. Drip Mouldings.

But on the contrary, on the exterior must be belt courses everywhere that water should drop off, also shaped for this purpose. They are termed drip mouldings. For this there must be a wash to lead the water from the wall and an undercutting, so that the water is led away by the wash and drops off. This undercutting is in the simplest case a cove, but it soon took the richest development in hollows and rounds. Since the smooth wash appeared somewhat tasteless with the greater richness, its upper surface was likewise animated by hollows and the simple water drip was replaced by forms like beaded astragals. Such belts for removing the water were required beneath each window; otherwise the masonry beneath it would become saturated

with water and would never dry out.

24. Water Wash.

Likewise the mere band mouldings in Gothic received a wash on their tops. Every raindrop that strikes on the horizontal or sloping top of a moulding or other projection, sprinkles and wets the portion of the wall above it. Similarly the rain or the adhering snow saturates the adjacent part of the wall. Both fall off on the wash. The requirement and admirable obedience thereto, demanded by our weather conditions, everywhere transforms the forms and creates new ones never before seen, in inexhaustible abundance. Yet washes without water drips, which, for example, change a thicker into a thinner wall, are to be saturated with waterproof material like varnish; otherwise they serve only to admit the water into the wall beneath and to saturate it in the worst manner. Therefore all slabs of the outside walks must be covered with lead or be coated with varnish or tar. This was also generally done in the middle ages.

How the water wash was gradually introduced on Romanesque belt courses is shown by the belt course of the choir towers of Magdeburg Cathedral. In Fig. 9 ¹², on the Romanesque belt, that shows the reversed base profile, is placed a wash without any water drip; the cove of the base moulding must cause the drip. Fig. 10 ¹² on the contrary already exhibits the wash with water drip. (The composition of this cornice given in cross section is not mediaeval, but it dates from a restoration in the 19th century). Between the two kinds of belts lies the choice by the architect. The first architect also designed the Romanesque art of Germany, if he likewise betrays a knowledge of French attainments. But the second architect, he of the bishop's passage, designed the Burgundian earliest Gothic style.

Note 12. From Clemens, Mellin & Rosenthal.

25. Arched Frieze.

The two arched friezes beneath these belt courses also exhibit the changed detail forms. These arched friezes serve in Romanesque art chiefly for connecting together the vertical projections, especially beneath the roof cornice, in order to produce at top a wider surface for the bearing of the rafters and

for the main gutter. Fig. 11 ¹³ represents a Romanesque arched frieze of S. Johann's Church in Schwabisch-Gmund from the end of the 12th century. Fig. 12 ¹⁴ comes from the longitudinal aisle of the Monastery Church at Heiligenkreutz near Vienna, which already recognizes and carries out the Gothic requirements in its interior, particularly in the vaulting of the clear-story; it was already dedicated in 1187. Fig. 13 ¹² represents one of the further advanced arched friezes from Magdeburg Cathedral, which belong to the master of the bishop's passage.

Note 13. From Jahreshefte des Württembergischen Altertum-Vereins.

Note 14. From Publicationen des Vereins Wiener Bauhütte etc. Vienna.

Chapter 3. Columns, Piers and Corbels.

a. Bases of Columns.

26. Bases of Columns.

Referring to what was stated in Chapter 2 (under b) relating to the wall plinth, let us first consider the base of the column, thus that part of the column, which transmits the load supported by the shaft of the column to the weaker masonry or to the ground.

As an existing art form was transmitted the base of the antique column to mediaeval art. This consists of round toruses and scotias, with a rectangular slab. Just where the middle ages transformed this antique form in respect to its purpose, can one perceive so justly the new-creating and the transferring of appropriateness; but one will also come to the conclusion, that the antique on its part placed little value on the appropriate development or transformation of such forms; it limited itself almost wholly to a perfected treatment of the details transmitted to it. Herein consists the great difference in nature between antique and mediaeval art. Both find certain architectural details; both transform these products foreign to them. Yet this transformation is limited by the Greeks almost entirely to the form itself, in order to make it appear more beautiful, while the middle ages and especially Gothic takes up this transformation first and entirely on account of architectural suitability, yet without neglecting thereby the beautiful treatment of the form. This nature of Gothic architectural forms was first represented by Viollet-le-Duc in his immortal "Dictionnaire Raisonnee de l'Architecture Francaise du XI au XVI Siecle."

The antique base has relatively little projection and the angles of the lowest slab easily break off, particularly if one does not have Grecian marble at command. The Romanesque base on the contrary gradually extended in ever increasing size and height, so that for the 12 th century are truly characteristic the great bases of S. Eodehard and S. Michael at Hildesheim or of Wunstorf. But furthermore, they avoided the unpractical free corner projections of the square slab by leaving angle projections between slab and torus. (Fig. 14 ¹⁵). These appeared about 1100. They soon took the forms of leaves or of fanciful animals, and they formed at the time of the transition to

the earliest Gothic, both graceful and easily intelligible ornamental parts of the buildings. We find them on the bases of the lay refectory at Maulbronn; here the lower torus already projects beyond the undercut scotia (Figs. 15 16¹⁶), and the cross section exhibits Gothic lines.

Note 15. From Dehio & von Bezold.

Note 16. From Paulus, E. Die Cistercienser Abtei Maulbronn. Stuttgart. 1879.

These corner leaves continued in Italy until in the period of the high Gothic. Thus we still find them on the bases of S. Anastasia at Verona. (Figs. 17, 18¹⁷). The Italians saw so many acanthus leaves on antique remains, and they had so exclusively imitated them during the period of Romanesque art, that even their Gothic cannot forget the acanthus leaf, as Fig. 19¹⁷ shows.

Note 17. From Mittheilungen der K. K. Central-commission zur Erforschung und Erhaltung der Kunst und historischen Denkmale.

Another enrichment on merely the formal side is composed of the decoration of the torus. Like the scotias of mediaeval bases, these were generally left smooth. At the end of the Romanesque period and the beginning of the Gothic, there was introduced on these members occasionally the richest ornamentation. Hamersleben presents for Romanesque bases (Fig. 20¹⁵), and the cathedral at Regensburg in its southern side choir for the earliest Gothic, the most charming and refined examples.

²¹ The bases have in every Gothic period the most luxuriant and noblest forms. Such are shown in great number by the vestibule and the early Gothic portion of the cloister at Maulbronn. (Figs. 21 to 23).

If the Romanesque base was enlarged to unusual dimensions on account of appropriateness, then the Gothic first sought to treat the transition by a relatively great projection. The lower toruses swelled far outside the load and even extended beyond the slab beneath them. But the free angles of the plinth were cut off; the round torus rested on an octagonal plinth. At some time appeared therewith the attempt to make this base circular like the entire column. Thus we see them together in the Liebfrauen Church in Treves and especially in the hall of the Monastery of S. Matthias there. The English preferred this

development almost exclusively. Thereby is produced a uniform enlargement and also an assured transmission of the load to the greater cross section without having to fear for the corners.

A further projection was then produced by bands placed around the bottoms of these bases. The Romanesque period had already introduced these.

Likewise the height of the bases was now determined according to reason and the facts. The bases should then be seen; they should present to the eye the necessary repose and security. If they were only effective when the church was not used and a single observer wanders around therein, on the contrary they would be invisible, when the pious multitude fills the aisles, so that this is artistically as unsuitable as possible. But if as today, after completion of the building the bases are at once buried in the pews, so as to not be seen in the general view, this proves the "naive character" of the modern period, that so freely ascribes the naiveness to the middle ages. The intellectual superiority of the giants, who created the Gothic, shows itself especially by the spirited and superior manner in which they treated all these apparently subordinate things. If one enters Rheims Cathedral, then he sees the bases in spite of the believers or the chairs; the same are arranged at the height of the shoulder. During the good period, the bases chiefly rested higher than 3.28 ft.

27. Bases of Piers.

Bases of piers likewise in the Romanesque period exhibit the antique profile of the base of the column; yet it did not increase with the Romanesque base of the column to that peculiar massiveness. Its greater projection was produced by the introduction of several profiles under each other. In an especially rich and luxuriant manner is this shown by S. Andreas' Church in Cologne.

In the Gothic period was seldom employed the simple pier; since its surfaces were almost always beset with columns, and thus the bases of the columns surrounded the whole. Therefore when during the high and late Gothic the bases, like all other mouldings, evermore dwindled (Figs. 24, 25¹⁸) in order to gradually change into a few hollows, all sorts of stonemasons' art

works decorated the base. Gabled flutes or hollowed sides were to replace the lacking base.

Yet another relic played a great part in this age. Since in the early Gothic period the torus of the base projected far beyond the lower plinth, the architects added bunches of leaves beneath the projections, a very charming and favorite decoration of bases. If no money existed, then men were satisfied with small corbels. These corbels were retained by late Gothic and were developed with all possible diagonal changes and other sportive forms of stonecutting.

Note 18. From Wiener Bauhütte etc.

b. Shafts of Columns.

28. Simple Shafts.

During the Romanesque period, smooth as well as decorated or fluted shafts of columns were in use. The shafts themselves were strongly diminished. This diminution of the shafts was retained even in the early Gothic, when the shafts were made of a single stone. If they were composed of separate courses, then the diminution disappeared in the Gothic.

With greater expenditure in the Romanesque period, the shafts were covered by rich surface patterns, lozenges, scales etc. But the surfaces of Gothic columns on the contrary are always smooth. Italy especially loved to make Romanesque shafts of columns like twisted ropes with all possible mouldings. If the selected surface patterns are usually very little suited to present to the eye the repose and stability required in these places, then are these corkscrews the greatest possible mistaken treatment of the supporting shaft of a column. Gothic therefore entirely forbade these twisted shafts. Only in Italy was the preference for them so great, that they were also retained in the Gothic.

With the again of foliage and the profiles of the antique, (about 1140) came in again likewise the fluting of the shafts, to entirely disappear therewith toward the end of the 12th century.

The previously circular shafts of the columns of the Egyptians, Greeks and Romans, which looked back on an unchanged existence of at least two thousand years, must now likewise with the entrance of Gothic be remodelled on account of appropriate-

appropriateness. The great progress accomplished by the Gothic also in the treatment of this structural part on the ground of reasonable transformation and development of the transmitted forms is particularly apparent; for the most charming new creations owe their existence to this both conclusive and imaginative procedure.

24 The round shaft of the column has no relation to the form of the load on it. The capital brings into connection only by its intermediary shape the usually very varied forms of the load with the circular shaft. So long as this load has a symmetrical form, whose outline is not too greatly removed from the circle or the square, the need for a change in form of the shaft of the column is not pressing. But when the burden assumes unusual forms, so that on one side occurs a projection of the load, and one does not wish to resort to corbelling, then must the shaft of the column be changed in form.

29. Auxiliary Columns.

In the choir of the Cathedral of Soissons, the columns have received an auxiliary column. In the choir of the Cathedral of Troyes are arranged two auxiliary columns, one towards the middle aisle and one next the side aisle. The architect of the Cathedral of Sens has solved the same problem in the nave by placing two columns of equal diameters across the thickness of the clearstory wall and beside each other, as the Romanesque cloisters already frequently showed. The cathedral of Rheims then exhibits the arrangement of four slender little columns about the great round nucleus column. (Fig. 26¹⁵), such a favorite in German Gothic. We find this form in the Liebfrauen Church at Treves, in S. Elisabeth at Marburg, in the Minorites church at Cologne etc.

30. Compound Piers.

Later eight slender columns accompany the central column, as in the longitudinal choir of the Cathedral at Cologne (Fig. 27¹⁹); the outline drawn in heavy lines is that of the shaft of the column; the more lightly drawn circular outline accompanying it is that of the outer edge of the bell of the capital. The angular enclosure gives the body of the abacus lying thereon, and the hooks at the outer edges of the ribs are the springings of the compartments, where the ribs have separated from

each other.

Note 19. From Schmitz.

Fig. 28 ¹⁹ exhibits the corresponding pier beneath the clear-story walls in the choir of the cathedral there. Here a richer group of columns is already placed beneath the transverse and diagonal arches. In Fig. 29 ¹⁹ is represented the plan at the height of the triforium and in Fig. 30 ¹⁹ the corresponding plan at the height of the clearstory window. In Fig. 31 ¹⁹ may be seen how the vaults of the clearstory rest thereon.

These auxiliary columns have also produced quite different proportions in the shaft of the column. The diameter is no longer fixed by the height of the column, as in the ancient consecrated forms of the Egyptians and Greeks; it chiefly depends upon the magnitude of the load, that it must bear.

In the scheme requiring that the diameter or the bearing cross section should be solely proportioned to the height of the column without regard to the load for which the column is there, apparently lies the reason for the adherence to the same forms. No new requirement in plan or in the distribution of the loads could permit a change in the sacred column. The thought was wanting, the conception, why the column was formed thus and so. If one views with the eyes of a calculating and constructing architect the details of the antique temple and therewith those of antique architecture in general, the Grecian architects appear like sculptors, to whom architecture and construction are foreign, but who are in possession of a scheme, evermore modelled again in the studio, which must solve architectural problems foreign to it. Any statical calculation must have been entirely unknown to them; otherwise they must have burst the coat of mail of the forms. The embodiment of Mignot's "art without science" in his criticism of Milan Cathedral! (See Chap. 8; statics of buildings in the middle ages; in this Heft of the Handbuch).

Now returning to the shafts of Gothic columns. The architects disposed these auxiliary columns with entire freedom and employed them in such number, that they might conveniently receive the ribs, cross arches and voussoirs above them in their numerous forms. In polygonal choirs the architects themselves resorted to oval ground forms for the principal columns in or-

order to solve the problem.

The choir of cologne cathedral likewise presents an example of this, both clearly asserting its purpose and interesting. (Fig. 32). Fig. 38¹⁹ again represents the corresponding plan of the pier above at the height of the clearstory window together with the extending ribs of the clearstory vault. In the nave there the innermost great column was suppressed in the earliest compound piers, and instead thereof were inserted surfaces entirely concave or hollows, which connect the slender columns.

The choir of the Cistercian Church at Zwett, that was erected in 1343 - 1348 by architect Johannes, most clearly exhibits this step of development. (See the preceding Heft 3, Figs. 30 and 160, of this Handbuch). Fig. 34²⁰ is the crossing pier, which in its symmetrical development corresponds to the piers in the side aisles of the long choir of the Cathedral at Cologne. The four great shafts have almost exactly the diameters and forms of the ribs extending therefrom, and likewise the four little diagonal rounds; the capitals are entirely shriveled. Fig. 35²⁰ represents the corresponding pier in the long choir; the pier in the choir polygon and those between the chapels may be seen in Figs. 36 to 38; the angle solution at the end of the nave chapels is illustrated in Fig. 39.

Note 20. From Wiener Bauhütte.

The Cathedral at Prague, which was begun in 1344 by Matthias of Arras, shows the next step of development, but certainly not more beautiful. Of the piers of the long choir, some yet possess capitals beneath the arches of the arcade; on others the mouldings extend without interruption down to the base. Fig. 41²¹ represents one of these piers; Fig. 41 is the plan above at the height of the triforium and Fig. 42²¹ is the corresponding one at the height of the clearstory window.

Note 21. From Essenwein's drawing.

The supporting points in the triforium and between the windows are reduced to so few square inches, that one must now fill up the opening in the pier at the triforium in order to make the whole stable. Peter Parler went his own way here; the design of his predecessor evidently had broad wall piers in the upper story also, so wide as result from the two strong tracery

mullions in Fig. 42; the window shows four widths of glass. (See Fig. 123 in the preceding Heft 3 of this Handbuch). Peter Parler entirely hollowed out this stumpy pier. Hence the peculiar hexapartite subdivision of the clearstory windows and the likewise unintelligible arrangement of the thick posts in the clearstory window as in the triforium. The design of the free projecting balustrade in the triforium is likewise something novel, which however evidently existed already in the design of Matthias of Arras, a design that one most commonly finds again in the Baltic cities.

The piers in the choir of the Parish Church of Kolin then show their transformation when capitals come into disuse. This choir structure was likewise by Peter Parler, and it was commenced in 1360, according to an inscription beside the door of the sacristy.²²

Note 22. See Neuwirth, J. Peter Parler von Gmünd, Dombaumeister in Prag etc. p. 115. Prague. 1891.

³²
³³ "The erection of this choir was begun in the year of the Lord 1360, on the 13 of the calends of February, in the time of the august Prince and Lord Carl, by God's grace Roman emperor and king of Bohemia, by master Peter of Gmünd, stonemason."

Likewise in the inscription over the bust of Peter Parler in the triforium of Prague Cathedral is mention made of this choir structure. (This has almost entirely disappeared).

"Peter, son of Heinrich Parler ²³ of Cologne²⁴, the master from Gmünd in Swabia, second master of this building, whom the emperor Carl IV brought from the said city and made master of this church. And he was then 23 years old, and he took charge in the year of the Lord 1356 and composed this choir in the year of the Lord 1386, in which year he commenced the stalls of this choir. And he finished the choir of all saints and superintended the Moldau bridge, and began from the foundation the choir in Kolin on the Elbe.²⁵

Note 23. Here correctly changed into Parler.

Note 24. Here correctly changed into Colonia.

³⁴ *Note 25. See Neuwirth, J. Peter Parler of Gmünd, Dombaumeister in Prag etc. p. 115. Prague. 1891.*

³⁵ The choir of the Kolin Church is basilican. The arcade arches have a cross section, that is characteristic for Silesia,

Bohemia and the Austrian Alpine lands there. Their mouldings follow the piers down to the base without any capitals. Yet the ribs of the vaults are treated differently from the vertical shafts and intersect them without the interposition of a capital. In order to make possible this intersection or the gradual springing of the ribs from the vertical shafts, the ribs at the height of the arch centres are set so far back, that only the fillets of their rounds meet the surfaces of the vertical shafts, as shown by the plans in Figs. 43 to 50.²⁶

Fig. 43 gives the pier in the axis of the choir, Fig. 44 is the adjoining pier, and Fig. 45 is that on which the polygon of the choir begins, Fig. 46 being a pier of the long choir. Fig. 47 represents a pier between the chapels, Fig. 48 is the angle pier of the end chapels, Fig. 49 is an angle projecting into the chapel, and Fig. 50 is the springing point beside the sacristy. (Also see Fig. 125 in the preceding Heft 3 of this *Handbuch*). Fig. 51²⁶ gives the plan of the window jamb. The enclosing lines are the existing plinth.

Note 26. From Wiener Bauhütte etc.

While at S. Bartholomäus only the ribs intersect the vertical shafts, the profiles of the arcade arches also mostly change opposite the hollows of the piers beneath them, and they likewise intersect each other. We find this in the contemporary Parish Church at Glatz; the plinths are interrupted under the arcade arches, since the pavement of the choir lies higher than that of the aisle.

The piers of S. Stephen at Vienna show the prodigality of profiles, that men employed in such places at about that time (1359). The effect of these numerous equal rounds and hollows, whose surfaces are also belittled by pear shaped mouldings, is neither beautiful nor particularly striking. For the cost of one such pier might have been constructed ten very effective piers in the early Gothic simplicity.

Just as little do the bases come to their own. Consider the confused breaking of this member in Fig. 52.²⁶ In Fig. 53²⁶ are represented the canopies and in Fig. 54²⁶ the springing of the vaults; the latter is highly instructive on account of the development of the stonecutting. Even as architect must one determine each rib separately in its extent, if he desires

to disentangle the drawing, --"a secret theory" of the mediaeval "stonemason."

We shall only later (in the Chapter on Vaults) train our eyes by the simpler forms of the early Gothic springings for these brain-disturbing arrangements of lines.

37 31. Bands around Shafts.

From 1100 onward occur bands around shafts; they are evidently intended to serve as ties for the long pieces of the shafts. They continue throughout the entire early Gothic, to disappear in the high Gothic together with so many other details. Their form is chiefly a doubling of the base profile. Maulbronn also presents masterly examples. (Figs. 55, 56).

c. Shafts of Piers.

32. Development.

The shafts of the piers are plain rectangular in early Romanesque art. But still next the side aisle was attached a half column in order to receive there a cross arch. Whether this was separately turned beneath the wooden ceiling to stiffen it better, or it was at once the beginning of the transverse arch of a cross vault, may hardly be determined. Such piers are possessed by S. Maria in Capitol and Great S. Martin at Cologne.

38 Two half columns were later attached to these piers in a longitudinal direction to support a second series of arcade arches. In Thuringia these were so decorated by such slender columns, that a niche was hollowed out behind them. Finally was also added a fourth half column next the middle aisle, which was also intended to bear the transverse arch or the vault. This richest development is to be found in S. Castor at Coblenz, S. Matthias at Treves etc. Further plain piers with angle columns are in use; the so-called paneled pier; its four angles are replaced by small shafts.

From these forms of piers were then developed compound piers in early Gothic, which are uniformly recessed and exhibit a slender column at each projecting angle. These charming creations are exhibited by the Cathedral at Bamberg and the Liebfrauen church at Treves in the most beautiful examples.

A compound pier is native to Italy in the earliest Gothic, as already shown by S. Ambrogio at Milan (Fig. 57 ²⁷) and S. Michele at Pavia. Beneath the transverse arches stands a

plain rectangular pier; under the diagonals are added little round columns; these churches originated shortly before 1200.

40 The same wall piers are found in the Cathedral at Trient (after 1212) and in the Parish Church at Bözén in advanced development. We likewise see them in the Cathedral at Parma and similar places.

27. From Dartéin; F. de. *Etude sur l'Architecture Lombarde etc. Paris. 1865-1882.*

d. Capitals of Piers and of Columns.

33. Capitals of Columns.

The capital has the problem of receiving a load, particularly that of the ceiling, whether horizontal or vaulted, and of transmitting it to the shaft beneath it. Since this shaft must generally occupy as little space as possible, it is made of the hardest or best material possible in order to make it as slender as possible, while the vaults or ceiling above it consist of softer material and therefore require a larger support. For both reasons the supporting material must change from a larger to a smaller cross section, i.e., it must receive a form projecting at top. It is clear that if on the contrary but a slight projection be given to the capital, its peculiarity of transmuting a larger cross section into a smaller one is almost entirely lost, and that it only fulfils its purpose of joining two forms with differently shaped cross sections, and therefore has for its existence rather a formal than a natural basis.

Now there certainly are cases in which the capital merely has to serve a formal purpose. This is usually where it is to be the head or the end of a form or is to be interposed with the same cross section between two differing directions.

But these various uses of the capital must by its treatment be made of themselves intelligible to the eye. Whether the outline of the capital be convex or concave, whether a cushion or bell capital or any other form be employed, the strong projection will show the bearing function of the capital; less or even no projection or the contrary merely creates a point of repose for the eye, that forms the transition between two different forms or movements. In the first case, artistic design will so treat the outline of the capital, that its shape may

not appear to weakly break apart under the load, but that its lines very strongly resist the burden. For the outline of the capital directly affect the observer. Therefore the decorative foliage will either participate in this powerful upward tendency under the supported load, or it may be so loosely attached to the supporting body as not to emphasize the movement.

Let us now examine how the capital appears in the different countries before the fruitful ground idea of suitability impelled it to new transformations.

41) Of the three Roman capitals found by the middle ages, the Doric, Ionic and Corinthian capitals, it considered almost solely the corinthian or Composite capital. Men indeed imitated the Ionic here and there, but so seldom, that its imitations remained without influence upon the forms of the mediaeval capitals.

42
43 The Early Christian period had undertaken two great changes in the Corinthian capital. It first placed a new and large slab on the fragile and weak abacus in order to create sufficient bearing for the arch. This impost stone is not a relic of the entablature block of the Romans; for the entablature block did not enlarge the bearing area afforded by the antique abacus. The face of the frieze of the antique entablature rises vertically above the face of the exterior of the column; this entablature block is therefore entirely without purpose and superfluous. The Early Christian impost stone on the contrary becomes larger upwards and receives on its upper surface a burden projecting beyond the upper diameter of the column. Already in this appears a spirit entirely different from the Roman; for the Roman strictly adhered to the Grecian canon of forms; he regarded it as a touch-me-not, which was required for new and grand structures, as might be, yet never dared to transform it for his own purposes.

44
45 It was entirely different in the world of Early Christian art permeated by ~~Grecian~~ ^{Christian} blood. After they had changed the capital by the new impost slab for their structural purposes, they also began to omit the sacred leaf-flaps and volutes. The outline of the capital then no longer results from its bell, but it forms a transition from the round shaft of the column to the square burden. And on the four sides of this transiti-

transitional body appears a novel and natural decorative art. This latter did not originate from inability to further develop and to sculpture the Corinthian capital; for the Corinthian capitals were then executed in the same building and at the same time; no, men were evidently tired of the Corinthian capital; the impulse toward novelty created these surprising forms. These were not at all Roman, not to mention Grecian.

34. Cushion Capitals.

The forms in France contemporary with Early Christian art are not preserved to us, the age of Charlemagne first shows us the corresponding details. They adhere more or less closely to the antique. About the year 1000 then appeared in Germany a new form, the cushion capital, although this capital had also been already invented in Byzantium during the Early Christian period and appears to have been native. At least the numerous cisterns of Constantinople exhibit this capital in more general use. The transition body of this new capital is composed of a reversed hemisphere, that at top receives a square form by vertical sections (Fig. 58²⁸), also frequently taking an octagonal form. (Fig. 59²⁸).

Note 28. From Dehio & von Bezold.

46 The earliest German cushion capitals are in S. Michael at Hildesheim (ded. 1022), S. Maria im Capitol at Cologne (ded. 1049), Brauweiler near Cologne (ded. 1071), S. George and S. Jacob at Cologne.

35. Ornamented Cushion Capitals.

While during the 11 th century these capitals are entirely plain, in the 12 th century animals and rich foliage are represented on their surfaces (Figs. 60 to 65²⁸), certainly not natural foliage but a fanciful ornamentation, that during the centuries gradually developed from the Early Christian. Most splendidly developed was this Romanesque ornamentation in Saxony and in Hesse. The grand capitals in S. Michael at Hildesheim (from the restoration, dedicated in 1186), at Wunstorf and Königslutter, form the climax of the native development. Contemporary with them are the beautiful capitals at Celnhausen in the Palatinate (Figs. 66 to 69). In the Cathedral at Magdeburg, on the capitals of the lower choir aisle (begun 1208; Fig. 70), with the native ornaments are mixed those of

France. In the Cathedrals at Naumburg and Magdeburg, as well as in the Parish Church at Gelnhausen (Fig. 71, 72²⁸), there no longer predominates the cushion capital but that basal form employed in the Moorish capital; here likewise does the ornament stand on a very high step. A special variety of capitals peculiar to Romanesque art is the coupled capital. (Figs. 73 to 76²⁸).

France does not know the cushion capital at all. It scarcely has undecorated capitals. On the contrary, England and Normandy employed the cushion capital in frequently compound and folded form with especial preference.

36. Trapezoidal Capitals.

Italy varies between a rather elongated cushion capital and the trapezoidal capital. The latter is particularly at home in brick architecture and it originated, because the transition body does not have the sphere as a basal form, but four conical surfaces, extending from the circle of the column to the four angles of the load. (Abacus).

37. Ornamented Romanesque Capitals in Italy.

Furthermore are found in Italy in even greater number decorated Romanesque capitals. These may chiefly be divided into two groups:-- into those imitating the antique, which are masterfully treated in Pisa and Lucca in particular -- these will be more fully considered in Chapter 11 (Ornamentation) --, and into those chiefly covered by fabulous beings from the animal kingdom and human figures, which exhibit quite inconceivable crudity and lack of skill in modeling. In view of this overpowering want of skill and taste, one cannot conceive that this same people later in the period of the Renaissance could ripen into the most highly gifted and refined ornamentatists and sculptors. There is apparently but one explanation for this; this mediaeval art apparently did not correspond to their capacities; on the contrary, the ancient Roman forms were suited to the powers and intellectual gifts of the same countries, particularly Florence and middle Italy, which were least permeated by German blood. Hence the unexampled rise of this vast multitude of divinely gifted artists after centuries of unproductiveness. For this reason is it so entirely useless to forever and alone collect and pile up in our museums the

remains of Italian Renaissance; this art style lies entirely outside German capacities as well as German design. It cannot be fruitful, and it never has had a fruitful effect. The proof is furnished by the centuries. For the weakness of Italian Romanesque artists is presented in Figs. 77, 78²⁷, the capitals from the Cathedral of Modena, which are still among the better ones. The capitals of S. Ambrogio at Milan, (Figs. 79, 80²⁷), like those from the Cathedral at Parma (Figs. 81, 82²⁷) are perfect crudities, but extremely characteristic of Italian works of that age. Even the eagle capital, such a favorite and so beautifully treated in Germany, appears with little edification in Milan. (Fig 84²⁷). It is already more successful if all animals and human forms are omitted and those Italians from the Romanesque period employ pure ornament. Thus for example, the capitals in Figs. 83, 85 to 87,²⁷ likewise from S. Ambrogio in Milan, already appear much more dignified and monumental.

38. Capitals in France.

As previously stated, France scarcely knows the cushion capital at all and employs scarcely beautiful transformations and imitations of the Corinthian capital. Southern France in particular covered these capitals with ugly representations of animals and men, which display morbid fancies with entirely unsuccessful abilities. One understands the gloom and horror of such a refined and enlightened spirit, as that of S. Bernard of Clairvaux, who wrote against these abominations about 1140 as follows:--²⁹

⁵⁰ Note 29. *S. Patris Bernardi Claravallensis Abbatis primi*
⁵¹ *melleflui Ecclesiae Doctoris Operum Tomus IV. p. 39. Cologne.*
⁵² 1641.

"Furthermore, and in the cloisters before the sorrowing brothers, what is that annoying monstrosity doing, a certain astonishing transformed beauty and beautiful transformation? Why are impure apes there? Why the wild lions? Why are the monstrous centaurs? Why half humans? Why are spotted tigers? Why are the fighting soldiers? Why the trumpeting huntsman? Beneath one head may you behold many bodies, and again on one body are many heads. Here may be seen a serpent's tail on a quadruped, and there is a fish with an animal's head. Here is

a wild beast, a horse in front, behind which is the half of a goat; there a horned animal is a horse behind. In brief, such a great and wonderful variety of different forms appear everywhere, so that men would rather read in the marbles than in books, and to occupy the entire day in observing these details than to think of God's law. For God's sake! If men are not ashamed of the unfit, why should they not at least save the expense?

Can one more strikingly characterize the ugly confusion of chiefly ugly animal forms? (Also see Figs. 88, 89).

As a constant and commendable exception may be given the coupled capital from the Museum at Toulouse (Fig. 90³⁰), that indeed comes from the cloister of S. Sernin there.

Note 30. From Viollet-le-Duc. Same. Vol. 2. p. 502. Paris. 1867.

53 39. Gothic Capitals.

With the beginning of Gothic, i.e., with the invention of the cross vault on ribs and the slender columns set beneath them, there occurred at the same time a revival of antique ornament and therewith also the imitation of the Corinthian and Composite capitals in an artistic and often quite masterly manner. Particularly beautiful new creations with this tendency are found in S. Laumer at Blois. Fig. 91³¹ exhibits neither Roman conception nor is it related in any manner to the later capitals of the Renaissance; it presents a completely independent transformation of the Corinthian capital with a masterful treatment. This 'Renaissance' will be more fully described in Chapter 11 (Ornamentation).

Note 31. Reproduced from Baudot, A. de. La sculpture française au moyen âge et à la Renaissance. Paris. 1884.

From this revival of the antique capital, northern France retained the bell. The acanthus leaves became too large and plain leaves, about as the rough forms of acanthus leaves appear; these may especially be seen in the Cathedrals of Laon and of Soissons. The leaves were then changed into those of the plantain; the tips of the leaves were coiled in volutes, and natural foliage began to animate the bell of the capital.

The foliage was at first so arranged, that it ascended vertically and adhered to the bell of the capital (Figs. 92-94³²).

About the middle of the 13th century it was loosely bound together as a cluster of leaves, as shown by the capitals from S. Chapelle at Paris (Fig. 95³²), from Cathedral at Cologne (Figs. 96, 97), from the Parish Church at Gelnhausen (Fig. 98³²), from the Minster at Strasburg (Figs. 99 to 101³²) and from the Minster at Freiberg-i-B. (Figs. 102, 103).

Note 32. From Dehio & von Bezold.

54 In the 14th century during the high Gothic period, the foliage became dryer and like tradesmen's work, to pass into those overloaded cabbage and thistle forms in the 15th century during the late Gothic period, and whose surfaces have great humps and fall into cramped movements.

In Italy the development of the capitals followed a separate path; the acanthus and the antique mouldings influenced them. The capital from the Cathedral at Orvieto (Fig. 104) dates from the time about 1300, and that from Palace Doge at Venice (Fig. 105) about 1400; moreover the age of the latter is hard to determine.

The bell form generally continues during the entire Gothic period without substantial changes; except that the abacus, like all architectural members, later became more lean and of less importance.

40. Abacus.

In the earlier Romanesque period, the capitals of the time of S. Michael at Hildesheim exhibit relatively high impost slabs with strongly projecting and graceful antique mouldings.

55 One sees later the reversed base moulding employed to decorate the impost slab. About 1170 then appeared extremely high impost slabs, for example in Great S. Martin at Cologne as well as in the Baptistery at Pisa. In the Gothic, the square abacus was gradually changed into the octagonal one. Besides this a also occurred circular ones.

56 If the burden be irregularly outlined, there are two methods of providing for it a sufficient bearing; either the entire capital is made of irregular form, or one starts from the round shaft of the column and shapes it to correspond to the burden. The architect of S. Yved at Braisne with unerring consistency, in order to arrange the load with the greatest possible symmetry about the centre, so placed the overlying parts, the slen-

slender columns, that he simply bent outwards the bell of the capital at those places and there gave it a greater projection. It is more artistic and more beautiful, if instead of this irregularity a corbelling is produced by a head or a larger cluster of leaves and flowers. This may be seen on the capitals from Semur-en-Auxois. (Figs. 107, 108 ^{32,34}).

Note 33. From Essenwein's drawing.

Note 34. From Viollet-le-Duc's Vol. 2. p. 514.

Since the projection of these small columns is generally quite bold, the architects of the early Gothic period quickly decided to arrange at this place a slender column outside the large and strong column, an extremely animated procedure, thereby clearing the way for an inexhaustible abundance of new forms, as described in Art. 28. (Shafts of Columns).

The capitals then gradually shrink together to almost entirely disappear in the period of late Gothic; this is illustrated by Fig. 106 ³³ from the Cathedral at Prague.

41. Pier Capitals.

Since the pilaster capitals in the antique are chiefly derived from the capitals of the columns, it is likewise in mediaeval art. The cushion capital indeed scarcely permits itself to be transferred to the pier. Thus only the crowning moulding of the column capital extends around the pier. The top of a pier from the Abbey Church at Laach well illustrates this. (Fig. 109).

If the top of the pier be more richly treated, it receives a bell, i.e., the surfaces of the shaft are slightly curved outwards; as for columns, this would either be decorated by ornament or by figures. Fig. 110 shows such a pier capital from the Cathedral at Parma.

e. Corbels.

42. Romanesque Corbels.

For supporting transverse arches and ribs on the walls, corbelled stones usually served instead of small columns and pilasters, and which are adorned by leaves and heads. They may generally be divided into two kinds; into those with the front alone developed, their sides being plain, and into those ornamented on all three sides. The French even have different names for the two kinds; those sculptured on one side being ter-

...the "Gothic" style, and the "Gothic" style is the style of the Gothic style.

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45. Gothic style.

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termed "corbeaux". (corbels) and those ornamented on all sides being "culs-de-lampe".

Romanesque art properly employed corbels only beneath cornices. First at the end of the 12th century, when the knowledge of vaulting appeared, were the transverse arches frequently corbelled out on heavy stones. Thus at Steinfeld in the Eifel and in S. Burchard at Halberstadt.

The Cistercian monasteries then preferred the corbelling of all small columns and imposts of arches, so that this became a characteristic of their churches, cloisters and chapter halls. This was shown in the preceding Heft of this Handbuch by the illustrations of Arnsburg (p. 69), Heiligenkreutz (p. 70, 71) and Chorin (p. 180).

43. Gothic Corbels.

On the other hand, the Gothic made a very extensive use of corbels. Masterly forms of early Gothic are the corbels in the chapter hall at Heiligenkreutz near Vienna (see the adjacent Plate). The capitals are named "horned" capitals from the form of the leaves ornamenting them, and they are directly employed as corbels; the ribs there commence in rectangular form, according to the early custom.

The developed natural foliage appears on the corbels of the Minster at Freiburg-i-B (Figs. 111, 112³³); of two heads on which the ribs are directly placed (Figs. 113, 114³³) stand near the threshold of those forms, that betray the hand of a tradesman and not of an artist. Unfortunately there are many, to whom on account of these grotesques of every distorted face, all distorted forms of unsuccessful art workers of modern times appear "truly mediaeval" and such artizans' work is assumed to be "correct in style." There were skilled and unskilled men in the middle ages, and not merely the masterworks but likewise the bungled works have been preserved. The latter preponderated entirely at certain times in the middle ages, especially during the high Gothic.

Such inadequate things are not peculiar to the style. These examples are warnings of what one should not do, especially that in Fig. 114. The animal forms of the corbels in Figs. 115 116 from the same porch are skilfully modelled; but they so lack all connection with the shape or purpose of the corbel,

that they might as well have been wrought on any other place. No advisable procedure.

The corbel from the Church at Heiligenkreutz near Vienna, (Fig. 120 ³⁶) exhibits at the first glance forms that appear late Gothic; the ribs have not particular capital and extend down the shaft of the column of the corbel, only being stopped by the cap moulding of the window sill course. Therefore the choir building would be at least referred to the end of the 14 th century; yet documents have been preserved, according 62 to which the new building of a choir was begun in 1290 and dedicated in 1295. And in fact, the unusual forms of details do not appear so like late Gothic on closer examination, but be- 63 long to the expiring early Gothic. The architect was a both individual and severely logical artist of the greatest importance.

Note 35. From Darteln.

Note 36. From Mittheilungen der Central-Commission etc.

Charming forms of the late Gothic period are presented by the corbels from Ulm Minster (Fig. 121) and from the Frauen Church at Esslingen.(Fig. 122).

Chapter 10. Vaults.

a. Tunnel, Cross and Fan Vaults.

44. Romanesque Vaults.

Romanesque architecture knew the tunnel vault with intersecting compartments, the cross vault and the dome, which it gladly and frequently constructed. We find them everywhere, that 64 the necessary abutments existed of themselves; in crypts, over apses, in crossings and between the towers. Only over the clerestory did this art fail to provide the required abutments. By the endeavor to construct these supports, Gothic originated from Romanesque art and now took its place.

Romanesque art had taken from the Romans the cross vault without ribs; it consists of two intersecting tunnel vaults. Such vaults are shown by the crypts of S. Maria im Capitol at Cologne (ded. 1049), of Brauweiler near Cologne (ded. 1051), and of S. Gereon at Cologne (ded. 1068).

Transverse arches of rectangular cross section were introduced later, which separate the different vaults. Thus in the elongated crypt of S. Gereon at Cologne (1190), in the Castle Chapel at Quedlinsburg, in the Abben Church at Laach (ded. 1156) etc.

Afterwards the cylindrical compartments were replaced by swelled compartments, i.e., the longitudinal section of the compartments of the vault were no longer straight lines but formed a segmental arch.

67 A further development of this vault is found neither in Germany, nor in Italy, Spain nor in England. On the other hand, France invented in the country north of Paris, in the ancient diocese of Soissons, the cross vault on diagonal ribs. These ribs had at first a simple rectangular cross section. The same is likewise shown by the first ribs in Germany, which indeed originated shortly before 1172 beneath the auxiliary tower of the mighty tower over the crossing of Great S. Martin at Cologne. Then the angles were decorated by two great rounds, so that merely a small flat was left between them. On the square was also placed a half-round, or the semicircular round alone formed the rib. Likewise occurred a colossal round of ovate section. All these forms are shown by Walkenried, the choir of Magdeburg Cathedral (Figs. 123 to 125 ³⁷), the vesti-

vestibule and a part of the cloister in Maulbronn (Fig. 126³⁷), the Cathedrals at Worms (Figs. 127, 128³⁷), Spires and Basle, the Monastery Church of Otterberg in the Palatinate etc.

Note 37. From Dehio & von Bezold.

During this period were also invented the bosses, which became such favorites after 1200, that they were enlarged to great dimensions. But in this early period men liked them to hang down far; thus in the Parish Church at Bacharach (Fig. 129³⁸), in S. Gereon at Cologne, in the Liebfrauen Church at Roerwand etc. The profiles of the ribs continually became richer, but likewise thinner. At the beginning of the 13th century, men sought to animate them by annular bosses or other small bosses. Annular bosses are shown by S. Maria im Capitol at Cologne and disk-like intermediate bosses by the Cathedral at Münster-i-W. In England the ribs and transverse arches were generally decorated by zigzag rounds, thus in Durham, Ely and Canterbury.

Note 38. From Bock, F. Rheinlands Denkmale des Mittelalters. Cologne and Neuss. 1869.

45. Gothic Vaults.

In stead of the simple cross vaults, hexapartite vaults over the middle aisle were very much liked in the earliest Gothic period. Why two bays of the plan were always thereby joined into one bay of the vaults is not properly explained; for the nave piers were differently loaded, and the diagonal arches have very wide spans. The only advantage might be in statical respects, in that by the diagonals of wide span the crowns of the vaults are carried so high, and the different compartments and arches exert a smaller thrust. Such hexapartite vaults are exhibited by Noyon, Notre Dame at Paris, Laon, the Cologne churches of S. Maria im Capitol, S. Cunibert, Great S. Martin etc.

Besides these quadripartite and hexapartite cross vaults, there are cross vaults with ridge ribs in southwest France, in the then English Anjou and Poitou, as in Westphalia. In southwest France, domes were previously in use. The general form of these domes was retained by the succeeding cross vaults with ridge ribs. They were indeed introduced into Westphalia by the relations this part of the country had with southwest France under Otto of Brunswick, properly Otto of Poitou. They likew-

likewise differ from the cross vaults of northern France in the mode of jointing. In the latter the joints of the compartments are perpendicular to the cross and side arches; in the vaults with ridge ribs the joints lie perpendicular to the diagonals. We now come to the reason for this.

46. Star and Net Vaults.

In the period of the high Gothic (in the 14th century), the ribs gradually shrank into mere borders. Therefore men began to design richer vaults, the star and net vaults. The separate compartments of the cross vaults were again subdivided into three compartments. Later were designed rich stars in the different bays. In the 15th century appeared the net vault, spanning the aisles of churches as well as the most elegant cloisters by a great tunnel vault, suppressing all cross and diagonal arches, and supporting this by ribs. One of the most charming examples of these vaults is also found in the parlor of Maulbronn, so rich in the treasures of architecture.

The ribs of these net vaults were at first portions of circular arcs, which then formed straight lines in plan. These ribs were also later curved in plan, so that they are of double curvature (Fig. 138³⁷). Such vaults are especially found about the close of the 15th century in Austria. Thus in the Wladislaw hall in the Palace on the Hradschin at Prague (completed 1502), in Church S. Barbara at Kuttentberg, in the Parish Churches at Br^üx and Laun in Bohemia and in the City Halls at Bunzlau and Löwenberg in Silesia. All these buildings are proved or supposed to be by Benesch of Laun, the architect of king Wladislaw II.

This development of the net vault was accompanied by a still more luxuriant and richer transformation. Beneath the star or net vault was stretched a second open network of ribs, that covered the former as by a veil. Erwin's art of duplication on the western facade of Strasburg Cathedral, which the architects of the late Gothic also carried yet further, is thus transferred to the vaults.

In England the development of the star and net vaults took their special course, which was based on the design of these vaults; therefore the designing of the vaults heretofore described may first be entered upon here.

47. Diagnosis of Cross Vessel Ring.

68 47. Diagonals of Cross Vaults; Ribs.

The diagonals of Roman cross vaults, produced by the intersection of two semicircular cylinders (tunnel vaults), are ellipses; they result from the construction of the tunnel vaults themselves, not existing first and determining the form of the vault or of the separate compartments. Moreover the drawing of ellipses presents difficulties, for example if men desire to construct separate centres for them or to lay out the separate stones in cut stone work. It therefore marks a great advance, when for the Romanesque period the diagonal arches were raised to semicircles; then the centres and the forms of the separate stones were easily drawn. Therefore these diagonals generally retained to the end of this art the form of the semicircle, until in the Gothic period ribs were set beneath them; they did not become pointed arches. The ribs placed under them are a permanent stone centering; this was indeed very necessary in those places. For the corresponding courses of two adjacent compartments do not lie in one plane; therefore at the diagonals, where they abut against each other, one compartment could not be bonded into the other; they must be cut and abut together. Thus is formed on the diagonal a continuous joint extending from the springing to the crown, that is particularly dangerous under the greater stresses. If one desires to avoid it, then must be constructed blocks of different shapes, that bond into the courses of both compartments. All the difficulties are remedied, if the wooden centering required at these places be replaced by a stone one, the rib. On the top of the latter may the courses abut directly against each other without injury or danger and without cut stones of particular form. It is therefore erroneous in the highest degree to believe, that the ribs are only ornamental or were even added later, if they do not extend or bond into the compartments of the vault. This is not required. Only when under great stresses these diagonal arches require too large cross sections underneath, must their upper edges extend beyond the compartments, so that the latter fit against the ribs. The reasonable fulfilment of the requirement has likewise here produced the new structural part and lent to it form and treatment.

The favorite transfer of these ribs to the upper side of the

69 vaults in modern manuals of architectural construction may well have come from the "masters" of stonework; but like almost everything practised by these famous "masters of the trade," it is just as unintelligible as ingenious. That the increased thickness at the top of the compartments, that bear the load, affords no secure support is clear. That modern statics likewise requires the strengthening at the bottom is well known. But for all vaults bearing a floor above their tops, it is just at the crown where the vault can be thinnest, that a considerable depth erroneously corresponds to these strengthening ribs, 10 since the thick filling or masonry adds great special loads on the vaults as well as on the walls.

Likewise erroneous as this modern construction of the diagonals is the statement favored in books on art history, that pointed cross vaults are lighter in construction than the semi-circular. Men can vault only squares with round-arched cross vaults; therefore in the Romanesque period, the so-called fixed system was followed, i.e., for a square vault in the middle aisle must there always be constructed two square vaults of half the dimensions in the side aisle. Hence the side aisles are half the width of the middle aisle; the pointed cross vault first gave freedom from this restraint.

Now as already stated, the diagonals of the round-arched cross vault, when this is not produced in the Roman way by the intersection of two cylinders, are semicircles like those of the pointed cross vault; a difference occurs only in the transverse and side arches. Let us consider the latter. The side arches were almost invariably much stilted. The middle ages almost always constructed the roof trusses above the vaults with through tie-beams; it was thereby compulsory to extend the clearstory walls so high, that the beams could pass above the transverse arches, i.e., the clearstory walls were always higher than the tops of the transverse arches. If the side arches, which had less span and therefore less height than the transverse arches, were set below on the capitals, then would have been produced above the windows a high and solid wall of great weight, that would have enlarged the floor of the attic but not the interior of the church. Therefore the side arches and therewith the windows were raised as high as

71 the main cornice permitted. They must be boldly stilted for
 72 this purpose. Now whether one had to strongly stilt a round
 or a pointed arch at this place has no effect on the utility
 of the vault.

There yet remains afterwards the consideration of the transverse arches of the two vaults. It is clear that the round arch exerts a greater thrust than the pointed arch, and therefore that the pointed transverse arch is far superior to the round arch is disputed by nobody. But the plan of the cross vault is entirely independent of the form of the transverse arch. This plan may be a square or even a rectangle; the transverse arch may there be round or pointed; the two stand in no primitive relation.

Today, when the richness of the middle ages is no longer required, one must consider only where it is possible to economize. It is therefore advisable to not carry the side walls very high and to not visibly stilt the side arches. Thereby is easily saved 13.12 to 16.40 feet in the height of the walls around the church, an economy that amounts to thousands of cubic feet of masonry. For the steel roof trusses do not require horizontal tie-beams, and without difficult arrangements, they permit the vaults to extend high into the roof, to utilize the superfluous attic for the interior of the church, thereby producing a great saving, as already stated. Thereby result interiors adapted to the new methods of construction, that do not merely represent reproductions of mediaeval churches, but which are conceived in the mediaeval spirit. The unfailing fountain of appropriateness has produced them.

It is likewise entirely erroneous to state, that pointed cross vaults are more easily constructed than round-arched ones. Also mistaken is the statement, that round-arched cross vaults can only be constructed over squares; they may be built over any rectangle just as readily as the pointed cross vault. The round-arched cross vaults are therefore not the reason for the so-called fixed system. This fixed system was employed for a brief period during the transition from the Romanesque to the
 73 Gothic, since it was the custom in the Romanesque period generally to lay out the middle aisle twice as wide as the side aisle. And indeed this was the custom, in spite of the fact that

these are almost without exception not vaulted in Germany, but
 elsewhere varied in the early Gothic period, this "flat roof"
 at first time, which was from the first intended for vaulting.
 then the old system was retained, of laying out the middle air-
 the tower as with the side aisles.

Since the side aisles, the diagonal and transverse arches
 have quite different purposes, these necessarily result different
 at the apartment above the choir. Where only these three
 by the tower the side aisle, the diagonal and the trans-
 verse arches, and the tower is a vaulted, the transverse arch
 men already stepped in the early Gothic to construct these
 arches with the same pattern. This appears in an illustration
 "That one of the three kinds of arches with one opening of
 the division." Victor-le-Duc has explained this procedure
 the division of the tower into three parts, the side aisle,
 the diagonal and the transverse arches, and the tower.
 so that they may not appear to drift away from the
 some new vertical supports of the pointed side and trans-
 verse arches. But the numerous ribs springing from one point
 like the case for star and net vaults, there are but two ribs
 a -- curved -- duplex, or these ribs form a bell, a surface
 of the tower. All other ribs are only as vaults.

48. Beginning of Vaulting.

The early Gothic tower vaults, and the vaulting
 the so-called leading arch in order to design the tips of a
 star or net vault. But this process is soon falsified; it is
 constructed by taking the "foremost way" on the plan of the
 horizontal projections on the plan of the various ribs of a
 tower.

these are almost without exception not vaulted in Germany, but were covered by wooden ceilings. When these churches were then afterwards vaulted in the early Gothic period, this "fixed system" resulted of itself. But if men actually built a church at that time, which was from the first intended for vaults, then the old custom was retained, of laying out the middle aisle twice as wide as the side aisles.

Since the side arches, the diagonal and transverse arches have quite different stresses, there naturally result different radii for these arches. They strongly differ from each other at the springing above the capitals. Where only these three or five arches (two side arches, two diagonal and one transverse arch) are concerned at a springing, this diversity in the starting of the arches generally does not appear ugly. Yet men already attempted in the early Gothic to construct these arches with the same radius. This appears in an illustration in the Sketch-Book of Wilars de Honecourt; he notes thereon:-- "Thus one strikes three kinds of arches with one opening of the dividers." Viollet-le-Duc has explained this procedure in his spirited manner in the work already mentioned. ³⁹

Note 39. Viollet-le-Duc. Vol. 6. p. 439.

The diagonals as round-arches must in fact be considerably stilted, so that they may not appear to break away from the more nearly vertical springings of the pointed side and transverse arches. But the numerous ribs springing from one impost, like the case for star and net vaults, there are but two possibilities for the arrangement of these ribs. Either they lie on a tunnel vault, so that the ribs spring from the impost in a -- curved -- surface, or these ribs form a bell, a surface of revolution. All other solutions appear as ugly as unwise.

48. Designing of Vaults.

One usually finds a short rule, that one should construct the so-called leading arch in order to design the ribs of a star or net vault. But this precept is soon falsified; it suffices only for the simplest star vault. The leading arch is constructed by taking the "longest way" on the plan of the star or net vault from the springing to the highest boss. The horizontal projections on the plan of the various ribs of a bay of the vault from the impost to the uppermost boss are suc-

successively laid off as a base. Over this is drawn a quadrant, a half pointed arch or a depressed arch curve, that begins at the impost and ends at the boss, whose height is at command; then all intermediate heights are obtained by lines extending vertically through the separate points of division.

The German middle ages may have proceeded accordingly and may have thus obtained the both uncertain and ugly imposts of the otherwise usually very beautiful net vaults. The architects evidently found themselves within the restraint of consecrated formulas, that they could not make void. Finally even the ribs were no longer struck from one point; they intersected at pleasure at greater distances from each other in the wall; they even penetrated in order to extend on the other side into the wall. The bosses of all these vaults are chiefly vertical cylinders, against which the arches in the different directions abut. (Figs. 139, 140 ³⁷).

The English have taken greater pains with the imposts and a regular springing of the ribs from the capital and have thereby obtained other solutions. They have in general created two new forms. One form of vault is most consistent and more easily designed; it forms with its ribs a true surface of revolution; all ribs are of equal length, equal height, and of the same circular arc; compartments of equal width are left between them. Thus their upper ends, their crowns are at the same height and form a semicircle in plan. These semicircles about adjacent piers or imposts are usually tangent to those of the opposite wall, while the adjacent circles so intersect, that each lacks a circular segment. In the remaining space at the crown of the vault is inscribed a circle, tangent to the four semicircles, and which is filled by a low spherical compartment. The four pointed spandrils still remaining and forming the main spans of the entire vault are constructed as shown in the adjacent Plate.

Just as the form of this vault is simple and consistent on paper, it is so difficult in construction, since the vault has no continuous curvature. For this reason the surface of rotation of the springing has generally been retained, but the ribs extend further to the crown, where they intersect. Along the ridge runs a ridge-rib, that extends along the entire vault,

which all specimens from the locality.

One of the greatest of these varieties is presented by the variety at Buxton. This variety is found in Germany over the whole of the country and is the most common of the group.

its origin is not known.

c. Other forms of *Vallis*.

40. *Stenodactylus*.

Reared and the variety were developed and developed in the same way as the variety at Buxton and the variety at Buxton.

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since all transverse ribs are wanting.

One of the grandest of these vaults is presented by the Cathedral at Exeter. Similar vaults are found in Germany over the halls in the Marienburg and in the Artushof at Danzig; yet their origin is not English.

b. Other Forms of Vaults.

49. Suspended Vaults.

Beside the fan vaults were developed the suspended vaults. We have already seen in the earliest Gothic on the lower Rhine, that men liked to permit the keystone to hang far down. This is shown very beautifully by the side aisles of the Parish Church at Bacharach (about 1220). (See Fig. 129). The grandest example is the hanging keystone in the decagonal building of S. Gereon at Cologne; it was completed with its vault in 1227:--

"In the year of the incarnation of the Lord 1227, on the octave of the apostles Peter and Paul, was completed the vault of the Monastery of S. Gereon."

Wilars de Honecourt also sketched about 1240 the art work, how one could construct a suspended arch. (See the preceding Heft of this Handbuch). "Thus does one cut a suspended arch."

On the City Hall of Brussels may be seen such an executed suspended arch.

The late Gothic particularly liked suspended keystones. The Chapel of S. Catherine in the tower of S. Stephen at Vienna (between 1400, the laying of the corner-stone of the tower, and 1433, completion of the tower) possesses a very long keystone, that is naturally supported by iron. From it extend free ribs through the air to the side keystones (Figs. 141, 142⁴⁰). The English also love to insert such suspended keystones in fan vaults; the best known and most charming example is in the Chapel of Henry VII in Westminster Abbey in London.

Note 40. From Wiener Bauhütte etc.

50. Slab Vaults.

Finally there is a peculiar kind of vault, consisting of ribs on the upper edges of which and supported by tracery rests a horizontal floor of slabs. The fountain house of the cloister of the Cathedral at Magdeburg is furnished with such an early Gothic and very beautifully designed slab vault. Famous are the chapels of S. Pierre at Caen, which exhibit this slab vault-

vaulting in a very ornamental manner and in charming combination with early Renaissance details.

c. Details of Vaults.

51. Imposts of Vaults.

If the springings of vaults be properly arranged, then belt courses, ribs and side arches are to be so placed, that they shall not intersect each other at random. It is not necessary that their middle lines should start from one point; otherwise it might easily occur, that only one half the rib might be visible, the other disappearing in the belt course, etc. If the different belt courses and ribs cannot find room in full size beside each other on the impost, then must a portion of each profile be suppressed, or one profile must intersect another. Even this intersection must occur in a regular way; this is illustrated by the lower courses in Figs. 143, 144.⁴¹ Then as the arch rises the profiles gradually separate from each other.

Note 41. Viollet-le-Duc. Vol. 4. p. 95.

In the middle ages, the springings did not usually begin with radial joints, but they were divided by horizontal bed joints as in Fig. 143. Only when the ribs had separated, did men revert to the radial form.

52. Compartments.

The joints of the compartments are differently arranged, according to whether the cross vaults originated from the Northern or Southern French schools, and further whether the compartments were made cylindrical or "swelled." The Northern French cross vault, which was mostly employed in Germany, makes the courses of the compartment perpendicular to the transverse and side arches, i.e., their bed joints run at right angles to their transverse and side arches. On the contrary, the bed joints of the Southern France cross vaults derive their direction from the existing Roman cross vaults, just as the entire form of this cross vault further imitates the domical form.

This kind of vault with us has been especially introduced into Westphalia. It consistently and in accordance with its construction receives ridge ribs, which have no basis and are therefore superfluous in the northern French cross vault; for in the northern French cross vault in which the crowns of the compartments are perpendicular to the transverse and side arches,

the courses at the ridge are also turned between the diagonal (they keystone) and the transverse or side arches as self supporting arches. This is the advantage of the northern French vault and the reason for the direction of its joints.

On the contrary, for the southern cross vault, in which the bed joints are nearly perpendicular to the diagonals, there remain at top four holes, as soon as the compartment courses reach the crown of the transverse arch. The succeeding compartment courses are no longer supported on the diagonal and the transverse or side arches, but only on the diagonals and their other ends are free, therefore a seam is produced at the crown, that is very insecure. Yet if ridge ribs extend from the keystone to the transverse or side arches, the last courses of the compartment then rest on these ridge ribs and on the enclosing transverse and side ribs. This is the reason for the origin of ridge ribs.

Now the filling courses of the compartments are either straight or curved. If they are straight, they are then supported only by resting on the next lower courses. The nearer the crown, the less they are supported, therefore they sooner slip, and hence these compartments must be also supported by centering, so that the courses may remain in place before the entire compartment is closed in, and until each compartment supports itself like a portion of a tunnel vault.

Compartments of vaults constructed of split stones or of concrete must naturally have centerings always, and therefore they are scarcely ever swelled; they are then a kind of pointed tunnel vault. If they are swelled, then a form for the swelling is made in wet sand on the straight lagging; but this produces very unsatisfactory shapes.

However when compartment courses are curved like arches and are constructed of dressed stones or bricks, this centering is omitted; this indicates a great economy of time and money. Likewise each course rests on the one next lower. But towards the ridge, if they threaten to slip off a lower one, they are turned between the diagonal and enclosing ribs as self-supporting arches. Therefore only one centre plank is required for the shape of the curvature of the compartment courses, that all have the same radius or arch; yet these compartment courses are

not removed totally about a centre like the corners of a
 The form of such a cross component and the position of its
 corners are best made clear in the following way. The corners
 never last are not swelled and portions of the pointed
 vaults, as previously stated; they are raised somewhat before
 it, since the diagonals are not produced by projection from a
 Now that the corners may end properly at the ribs, their form
 are of uniform thickness. But as soon as these corners
 the northern French vault, approached the joining of
 one corner the component without tracing.

The thickness of the component varies greatly in the pro-
 the ribs; they are generally too thick (about 1.5 ins.). Yet
 the vaults of Notre Dame at Paris show a thickness of but 0.75
 ins., although on occasion they are built of limestone.

52. Ribs.

The most primitive form of the rib is the compound. A rib
 and square occupies the cross section of the rib. The earliest
 of such ribs in Germany must be found in Great S. Martin at Go-
 ltern. Beneath the eastern auxiliary tower of the crossing tower
 at, where these smaller towers rest on the irregularly above the
 vaults of the side aisles. The architect was executed this
 the entire outline of the tower likewise carries a double
 but angles were previously not in use in Germany, while the
 inged already possessed such in design or model. On the one
 et hand it may be stated, since the tower of Great S. Martin
 racted in fact; there would exist in fact an increase in the

not arranged radially about a centre like the courses of a dome. The bed joints are therefore everywhere of equal thickness.

The form of such a cross compartment and the position of its courses are best made clear in the following way. The compartments that are not swelled are portions of the pointed tunnel vaults, as previously stated; they are indeed somewhat depressed, since the diagonals are not produced by projection from the transverse or side arches but are independent semicircles. Now that the courses may end properly at the ridge, their beds must be parallel to the ridge joints; thereby the bed joints are of uniform thickness. But as soon as these courses are arched upwards to produce a swelling, the joints open more widely at the middle. In cut stone work, these wide joints may be avoided by the stonecutting, but not in brickwork. Hence for the latter, men were compelled to either remedy this defect by inserting courses of triangles here and there, or to abandon the northern French vault, approximating the jointing of the southwestern French vault with a seam at the ridge; then may one construct the compartment without piecing.

The thickness of the compartments varied greatly in the middle ages, they are generally too thick (about 11.8 ins.). Yet the vaults of Notre Dame at Paris show a thickness of but 4.72 ins., although or because they are built of limestone.

53. Ribs.

The most primitive form of the ribs is the rectangle. A plain square composes the cross section of the rib. The earliest of such ribs in Germany must be found in Great S. Martin at Cologne, beneath the western auxiliary tower of the crossing tower, where these smaller towers rest quite irregularly above the vaults of the side aisles. The architect who executed this choir structure of entirely Romanesque design, that was dedicated in 1172, was acquainted with these French acquisitions. The entire outline of the tower likewise betrays a knowledge of French predecessors. Towers with four auxiliary towers at the angles were previously not in use in Germany, while Laon indeed already possessed such in design or model. On the other hand it may be stated, since the tower of Great S. Martin was already completed at a time, when none of these towers existed in Laon; there would exist in fact an increase in the

development.

Dexter S. Gable and Tacey Gable.

The Gables.

The Gables serves to terminate the end of the roof. Only the front elevation is subject to the same treatment as the rear. The roofline (vertical) typical Gable is composed of three parts. The front elevation, the rear elevation and the side elevation. The front elevation is composed of two parts: the front elevation and the side elevation. The rear elevation is composed of two parts: the rear elevation and the side elevation. The side elevation is composed of two parts: the side elevation and the rear elevation. The front elevation is composed of two parts: the front elevation and the side elevation. The rear elevation is composed of two parts: the rear elevation and the side elevation. The side elevation is composed of two parts: the side elevation and the rear elevation.

is shown a main cornice, it is not generally followed. The front elevation is composed of two parts: the front elevation and the side elevation. The rear elevation is composed of two parts: the rear elevation and the side elevation. The side elevation is composed of two parts: the side elevation and the rear elevation. The front elevation is composed of two parts: the front elevation and the side elevation. The rear elevation is composed of two parts: the rear elevation and the side elevation. The side elevation is composed of two parts: the side elevation and the rear elevation.

It one occupies the one and only one position of the front elevation. The front elevation is composed of two parts: the front elevation and the side elevation. The rear elevation is composed of two parts: the rear elevation and the side elevation. The side elevation is composed of two parts: the side elevation and the rear elevation. The front elevation is composed of two parts: the front elevation and the side elevation. The rear elevation is composed of two parts: the rear elevation and the side elevation. The side elevation is composed of two parts: the side elevation and the rear elevation.

The Gables of Gables.

The medieval Gable again actually derives its name and the reason of form from the construction and the result. Since it must combine vast roofs with great expansion in form, it thus presents a colossal surface to the action of the wind. It must therefore be stiffened and strengthened in order to resist the wind. The front elevation is composed of two parts: the front elevation and the side elevation. The rear elevation is composed of two parts: the rear elevation and the side elevation. The side elevation is composed of two parts: the side elevation and the rear elevation. The front elevation is composed of two parts: the front elevation and the side elevation. The rear elevation is composed of two parts: the rear elevation and the side elevation. The side elevation is composed of two parts: the side elevation and the rear elevation.

development.

Chapter 5. Gable and Tracery Gable.

54. Gable.

The gable serves to terminate the end of the roof. Only in poor conditions is employed the cheap solution of the hip roof.

80 The roofless (invisible) Egyptian temple possessed no gable.
81 On the contrary, the sacred ornamentation of the Grecian temple
82 was the pediment. Its tympanum was adorned by rich statues; acroterias crowned its apex and its ends. In the Early Christian period the main cornice no longer usually extended horizontally along the base of the gable; only the ends of the gable show a main cornice, if it be not generally fallen.

Romanesque art did not greatly change in this appearance. The inclination of the roof surfaces only gradually became steeper, and dwarf galleries animated the surfaces. Such examples are given in the preceding Heft of this "Handbuch" (p.166 etc.). Only with the Gothic did new life begin to sprout and to produce a world of variations.

If one compares the one and only one pediment of the Greeks, which they designed and adhered to for a thousand years, with this legion of gables of mediaeval art, these innumerable children of an inexhaustible and unfailing imagination and creative power, then one has approximately a scale for the proper estimation of the Grecian and the mediaeval architect.

55. Forms of Gables.

The mediaeval gable again naturally derives its shape and its wealth of forms from the construction and the requirements. Since it must terminate vast roofs with great extension in height, it thus presents a colossal surface to the action of the wind. It must therefore be stiffened and strengthened in order to not be overthrown. Now the buttresses at the angles entirely of themselves afford supports for the greater strength of the ends of the gables. Finials are added to them, even entire small towers, and thus the lower corners of the gable are curved against sliding. This form is preferably shown by the early Gothic gable. Since intermediate stiffening is required for wide and high gables, then especially in brick countries, finial-like buttresses project from the surface of the gable, an inexhaustible source of new forms, which at last found em-

employment as purely decorative.

The second requirement for the gable wall is that it must be covered. The cheapest and simplest means is for the material covering the roof to extend over the slopes of the gable. But the storm easily penetrates beneath this. If means permit, it is preferable to cover the gable wall by a coping for itself, and to terminate the roofing under a projection of this coping, where at any time may be applied a chinking of lime with hair. This front portion of the gable wall, that rises above the covering of the roof, is in its body as thin as possible, at most 1.31 ft. thick. The remaining thickness of the gable is usually employed in carrying a stairway along the gable slope inside to the ridge. For the maintenance of the roofs and gable, this is an excellent plan.

The coping slabs may either follow the slope of the roof or the courses of the gable masonry may be covered in horizontal steps; this produces the stepped gable; these seldom occur on churches. Mülhausen in Thuringia presents in its *Liebfrauen Church* a splendid example of the use of such stepped gables at the end of the early Gothic period. These steps assume in the course of development all possible ornamental forms of battlements.

The third point of departure for the treatment of gables are the openings, that are required or advisable for lighting the attic. These received all possible forms of windows; even rose windows occur with lavish tracery. The transepts of *Notre Dame at Paris* afford magnificent examples from the second half of the 13th century (Fig. 145⁴²); the span of the rose window, above which rises the gable, is not less than 42.7 ft. The following inscription on the plinth of this transept commemorates the spirited architect and the date:--

"In the year of the Lord 1257, on the second of the ides in the month of February, this was commenced in honor of the Mother of Christ during the lifetime of Master Johannes, the architect from Chelles."

Note 42. From Viollet-le-Duc. Vol. 7. p. 144.

56. Crocket Flowers.

A peculiar decoration is also here placed on the gable spandrels by blind tracery. Otherwise on these places are developed

the crocket or angle flowers. Leaves and flowers sprout from the angles of the gable in a regular series. Indeed, not only the angles of the gables have them; they are found on all angles of the finials and of parts of balustrades, giving to the outlines of the building against the sky a charming means of ornamentation on all masses, never seen before. Perhaps the invention of these crocket flowers was made previously by Early Christian art. They are still to be seen in simple form very commonly on the Early Christian reliefs, which ornament the altars, bishops thrones and diptychs. In oriental carpet-weaving have they been retained with Grecian Oriental immutability from the Early Christian period until today. Fig. 143⁴³ exhibits early Gothic crocket flowers from the towers of the western facade of Notre Dame at Paris, from the second half of the 13th century; Fig. 148⁴⁵ are the high Gothic crocket flowers from the southern tower of Cologne Cathedral; Fig. 147⁴⁴ is a crocket flower or crocket from S. Stephen at Vienna. Together with the crocket flowers appeared in early Gothic an especially characteristic ornament; the bud-like ball flowers are placed in the hollows. (Fig. 140, 150).

Note 43. Viollet-le-Duc. Vol. 2. p. 243.

Note 44. From Essenwein's drawing.

Note 45. From Schmitz.

57. Tracery Gable.

The gable has shown itself as an ornamental part to such a degree, that men sought on account of its charm to assure to it other places, which did not exactly require a gable. Openings of windows and doors were covered by gables, which were then termed tracery gables. (Wimperge).

Their introduction over doorways is easily conceivable, since the wide jambs of the doorway usually project from the wall and must be roofed over. The tracery gable is the protecting gable for these roofs. Arranged above the windows, they afford welcome points of support between the buttresses for the strongly projecting main cornice, as well as for the roof balustrade (Fig. 151⁴⁶). In S. Urbain at Troyes, this is indeed so skillfully employed, that the balustrades in plan extend like struts from the buttresses to the tracery gables.

Note 46. From Dehio & von Bezold.

96. 1970-1971

The great tracery gable over the middle portal of the glorious western facade at Rheims is one of the richest and most luxuriant examples of such tracery gables. (Fig. 153⁴⁷). According to the architect's inscription given in the preceding Heft of this "Handbuch" (p. 196), it was designed by Jehan le Loup and was executed by Gaucher of Rheims. Since the corner stone for rebuilding the cathedral was laid in 1211, then these parts originated about 1250. At the middle, Christ crowns his Mother; cherubim and angels stand beside them; God the Father looks down benignly.

Note 47. Viollet-le-Duc. Vol. 6. p. 6.

58. Cross Flowers.

Instead of the antique acroterias cross flowers occur in Gothic. If acroterias already exhibited a wealth of spirited variations, so unfolded the middle ages hundreds of the most beautiful cross flowers for each Grecian new creation. They are the strongest and highest expression meanwhile, that the building has become a living organism, which sprouts at every point and angle and grows with incomparable power and freshness. Fig. 152⁴⁸ comes from S. Urbain of Troyes. Fig. 155⁴⁵ exhibits a high Gothic cross flower from Cologne Cathedral, which already has much mannerism and is close to the border of pattern tradesmen's work. In Fig. 156 is reproduced one of the most spirited creations of late Gothic. (Beginning of the 16th century).

For special richness, as for example in Fig. 145 from Notre Dame at Paris, these cross flowers were crowned by entire statues.

These crosses also frequently occur to crown the gable. Thus Fig. 154 illustrates a very favorite form for the earliest Gothic, particularly exhibited by the Cistercian churches and their Burgundian sisters.

Chapter 6. Brick Architecture.

a. Brick Churches in the North German Lowlands and in Upper Italy.

59. Material.

If we have heretofore seen how suitability is the basis from which came mediaeval details, we shall also learn to recognize a second fertile means of the artistic imagination, the material with its essential peculiarities and the particular mode of preparation, that it requires. What should be the form of base, shaft, capital and wall, window and cornice in brick architecture?

Bricks naturally have smaller dimensions than cut stones. In the latter the dimensions available are almost unlimited; but in order to be easily and well burned, bricks require smaller sizes. If the moulded bricks, of which mouldings, bases, capitals etc. are composed, are made in considerably greater dimensions, then these are destroyed by the cracking and crumbling of the brick clay. Therefore the brick burner prefers & to make ordinary and moulded bricks of the same size. If one desires to produce moderately bold cornices therewith, this requires the transformation of all members, or these must be quite stunted.

60. Churches in the Mark (Brandenburg).

The earliest brick churches with determinate dates, those at Jerichow, exhibit at first mistaken attempts in this direction. The architect has constructed of courses of bricks the bases of the columns as well as the plinths of the apses, each of which represents one of the usual rounds or hollows. They are entirely lacking in scale and appear badly stunted in their places. (Fig. 157⁴⁸).

Note 48. From Adler, F. Mittelälterliche Backsteinbauwerke des Preussischen Staates. Berlin. 1860 - 1869.

61. Relationship with Upper Italy.

The capital does not present the cushion form usual in Germany, but the well known transformation from Italy, where inclined conical surfaces extend from the shaft out to the four upper corners. Thereby is obtained a diagonal and gradual transition, a slight projection, while the abrupt projection of the cushion capital diagonally is scarcely possible for bricks.

On the ground of similarity of such detail forms, it has been assumed that the brick architecture of the north German lowlands was derived from Italy. This conclusion seems very proper in view of the details mentioned; yet it will prove to be untenable on closer investigation.

On the contrary, it must be first said, that the method of making bricks in the Mark at that time of the assumed transference was entirely different from that of Italy, so different that in any case any transfer of the art of burning bricks must be entirely denied, and further investigations of the Italian origin of forms must be instituted.

In Italy no brick is exactly like another, and indeed they are so unlike, that this cannot be explained by distortion in burning; They neither have equal lengths, widths nor heights. The Italians must have beaten great cakes of clay, from which they cut out the bricks by means of parallel and transverse strokes of a knife. Since the cakes were of different thicknesses and the parallel cuts with the cuts at right angles thereto were not too accurately made, there were produced bricks not intelligible to any Germans. But on the contrary in the Mark, the bricks are all alike, so far as this may be possible for bricks; they were struck in moulds, as still today is the case.

Therefore the Italians did not introduce the making of bricks into the Mark. Brick moulds were known and were common in Germany since the Roman period. This is proved by documents. From S. Raban of Fulda (about 830), we have in his work "De Universo" a complete description of this moulding of bricks after the German method. Raban writes as follows:--

"They are called covering tiles (*tegulae*), since they cover buildings, and rain tiles (*imbrices*), because they receive the rain (*imber*). But *tegula* is the first form of the name and its diminutive is *tigillum*. But they are likewise termed *laterculi*, as they are made wide (*lati*), enclosed by four wood strips. But the *lateres* are rough. They are also so named, because they are made broad in wooden moulds. Then is that called crates (handle) on which men carry the clay for these rough bricks. For they are combinations of rods, called *apo* to *cratin*, i.e., what is opposed. The clay (*lutum*) is so nam-

named, as some believe, from the contrast, because it is not pure. For anything washed (lotum) is pure."

Bricks were thus well known after the time of Charlemagne. When after the year 1000 Tankmar, the tutor of S. Bernward of Hildesheim, boasts of him that without foreign instruction, he discovered how to use tiles (latus ad tegulam), then aside from the lack of clearness in the meaning of this statement, still so much is certain, that about this time bricks were known and made in Hildesheim. But Hildesheim lies so near Magdeburg and the Mark, that accordingly the knowledge of bricks had existed for centuries on the Elbe, when the Germans finally these Slavic lands. It is not necessary to regard the Dutch settlers as bringing with them the moulding of bricks. Germany was such a highly developed country and the Germans were so constantly journeying in the mother country as well as in the entire known world, that industries and knowledge like that of moulding bricks were known and practised in Cologne, Fulda and Hildesheim, and evidently in Magdeburg.

That the forms of brick architecture in the Mark might be derived from Italy is possible, without making it necessary for Italians to be the originators of the first brick buildings in the Mark; for the Germans were then masters of Italy. German bishops ruled Italian provinces. The Archbishop of Magdeburg was Count of Romagnolo, and Bishop Anselm of Havelburg was Archbishop of Ravenna. But Italy and the province of Magdeburg had as intimate relations as today. It is clear that German architects on their study journeys sought for beautiful fields, and that they knew and brought home the detail forms of Italian art is therefore not wonderful.

Now the country about Magdeburg possesses the most beautiful building stone, and therefore the Magdeburg architecture was always a cut stone art. This is shown by the remains of Magdeburg Romanesque churches; such are exhibited in Königsutter and Marienthal near Helmstadt.

That the owners of buildings on the right of the Elbe, some miles from so many architects, did not turn to upper Italy to erect a village church is self evident, in the case of the predecessor of the Monastery Church at Jerichow. The architects of these brick churches were the architects of the neighboring

Magdeburg province, who were acquainted with the brick architecture of upper Italy. This is shown by the entire existing appearance of these brick churches, which is not Italian but truly of Magdeburg.

Moreover it must be made particularly prominent, that until now no one has been in position to show, that the well known and still existing Romanesque brick buildings of upper Italy originated before those of the Mark. This opinion is obvious and has much in its favor. The Early Christian art of Italy was a brick art; therefore arises the assumption, that the Italians practised brick construction even in the time of the Lombards and later, so that brick was the bearer of the art forms. But proofs do not exist, that known Romanesque brick buildings of upper Italy are older than those of the Mark. That brick construction in Germany likewise had never disappeared since the Early Christian period is proved by the writers, as already stated; this is evidenced first of all and most strikingly by the entirely different German practice at the time, when brick construction was adopted on the Elbe, a method of production that Raban had already described in Germany about 830, as previously stated.

62. First Brick Buildings in the Mark.

The first definitely dated brick buildings of the Mark are the Village Church and the Monastery Church at Jerichow; the former was already standing before 1144; the latter was erected towards 1150. The two principal documents are as follows.⁴⁹

Note 49. See Riedel, A. F. Codex diplomaticus Brandenburgensis. Vol. 3. p. 79. Berlin. 1843.

90 "(The beginning is wanting) - - - thus these brothers have the right to set him aside and to procure another by better compensation, as it appears suitable for their purpose. If he wishes to oppose this, he shall be restrained by the justice of the synod and the power of the bishop. Whoever of the people, whether of the ministry or free, wishes to give to that church something of the property of that watch-tower, that he possesses by the right of a benefice, for the good of his soul, whether well or sick, we leave to him a free hand therein. F Following is the description and the names of the estates and villages which we have granted to that church.

In the village of Jerichow 15 solidi and some measures of land appertaining to the needs of the priests, and the remainder previously belonging by right to the priests of that church; namely from the fishery and the proceeds of the harvest, and from what the farmers paid from the yearly yield of their fruits. The village of Wulkow and Nizinthorp, and also the village, which is named Slavic Wulkow and also Little Wulkow, with all usufructs, arable and not arable, with fields, meadows, ways and non-ways, exits and access, with pastures, waters, fisheries, mills, forests, hunts, debts and demands, with all rights and its appurtenances, or whatever is elsewhere mentioned or can be named. And so that this our gift may remain fixed and unchangeable for all time, we have written and made fast by the attaching of our seal and that of the venerable Anselm, bishop of the said church; so that whoever attempts without our permission, which be far from us, to proceed, shall know himself to be punished by the ban of the Apostles Peter and Paul, by the curse of the aforesaid bishop, and by the restraint of eternal damnation, unless he again makes good his procedure by worthy satisfaction in repentance. But the witnesses of this our gift and act are:-- the venerable Anselm von Havelburg, bishop of the above church; bishop Wigger from Brandenburg; Gerard, prefect of Magdeburg Cathedral; priest Adolf; priest Gunther; Bruno the younger, Bartold and Godefrid, deacons and canons of Magdeburg Cathedral; Evermod, prefect of S. Maria, with its convent; Walo, prefect from Havelburg; Lampert, prefect of Letzke; Odalrich, prefect of S. Maria in Halberstadt; Sigeboth, canon of S. Nicolai; the ecclesiastic Bono; but of the laity, Markgrave Adalbert; Hademar, prefect of Magdeburg and his sons Sigfrid and Alverich; Hermann von Plathe; Adalelm von Burg and his son Gernod; Heinrich von Grubow; Hartmann, castellan of Jerichow; Conrad Frankenleben; Rudolf von Gibichenstein; Adalbert von Elwenbuie and also several others. But we grant to the same brothers with their neighbors in Jerichow the common use of the forest, of the pasture land, of the fishery and of the meadow land, of the arable and non-arable lands, so much as they need.

In the year of the incarnation of the Lord 1144, in the seventh indiction, the fourteenth epact, in the current sixth year

of the ordination of the lord and venerable Bishop Anselm von Havelburg and in the sixteenth year of this church of Jerichow.

Given at Magdeburg in the Lord. Salvation. Amen."

According to this, the Village Church at Jerichow has already stood since the year 1128. The most extended document relating to the founding of the Monastery runs as follows:--⁵⁰

Note 50. See Riedel. p. 336 et seq.

93 "In the name of the holy and indivisible Trinity, Wichmann, by God's grace Archbishop of the holy Magdeburg Church. Since with the approval of God, we administer the office of shepherd of the holy Church of God, so must we lead visibly all believers in Christ, but especially the followers of the holy religion, to be charitable in advice and duties. For this reason, 94 we gladly consent to the request of our brothers in Jerichow, and we set apart their place in this writing, and we gladly recognize, that however their congregation may lie in the midst of our possessions, they still with full right belong to the Havelburg Church, both in their temporal as well as in their spiritual occasions, so that they must have not alone from their own but from us. So that from henceforth all may be more certainly known, how correct our consideration is on this occasion, we hold it advisable to take up somewhat more fully the first founding of the congregation. For when the famous Count Rudolf von Stade, the son of Margrave Rudolf, was slain by the Thietmars, Lord Hartwig, brother of the slain prince, at first prefect of the Bremen Church and later archbishop, and their very pious and sanctified mother, Lady Richardis, even founded this company of brothers in memory of him and of them, before they made the Magdeburg Church heir of their Castle of Jerichow and its possessions; they founded this in the Parish Church, that lies before the Castle of Jerichow, and completed their investiture in presence of King Conrad at the Havelburg Church in the city of Magdeburg, where Margrave Albert and his son Otto also took this congregation under their protection. But when the brothers had remained there for several years, the place appeared little suited for religious exercises, then Lord Anselm, who was at that time the venerable Bishop of Havelburg Church, long before he was translated to the throne of the Archbishop of Ravenna, bettered the great d

disadvantage by Lord Friedrich, the Archbishop, our predecessor in the Magdeburg Church, and by Heinrich and Rudolf, his brothers of Jerichow; for they possessed the Castle, at first by loan from Lord Hartwig, later from the sovereignty of the Magdeburg Church. Margrave Otto also left to them the jurisdiction of the Monastery after the death of his father, so that they were still more favorably disposed toward the brethren. They were also inclined to benevolence by Bishop Anselm, and because their stepfather Hartmann no less favored this purpose, and at the admonition of their very pious mother Gredda, they first gave the field adjoining the city, which they possess today; they then added the place outside of the city, where they had a more quiet, isolated and more comfortable residence than formerly, and they erected a church with a monastery, as becomes evident from the fact itself. Thus begins the estate of the monastery on the Northern side of the village on the lake, that is called Clinus, and constantly following the curved bank of this river, extends eastward to the borders of the little neighboring village named Stenitz; but from there it turns to the south along the aforesaid border and returns to the village of Jerichow and stops where it began.

But they also gave to the brethren a meadow, that lay between the meadow of the citizens on the bank of the river Elbe, which is plainly marked in length and breadth in its borders, since they by these and other merits relating to the monastery, for themselves and at the same time with their father Albert and mother Gudela, the stepfather Hartmann, and their famous lords, the noble Margrave Rudolf with his revered spouse, Lady Richardis, and her sons Hartwig, Archbishop of Bremen, Rudolf and Udo, the noble princes, and with all their relatives acquired pious remembrance, and received eternal blessedness with those fearing God. But since Lord Hartwig and his mother just at this time gave to the Magdeburg Church for its own the Castle of Jerichow with its other acquired estate, with the exception of the before mentioned Parish Church, the brethren received the aforesaid estate from the hand of Lord Friedrich, the Archbishop, thus our predecessor, for their continual use, at the mediation of Lord Anselm with his legal advisers Heinrich and Rudolf; and gave to the Magdeburg Church in exchange there-

... (of land) in the village of ...
... as is also the case with ...

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therefor 11 hides (of land) in their village of Nizendorp, that is otherwise called Gerdekin.

87
98 When we thus again regard this well considered act of our predecessor, we concur in the exchange, judge it to be right, and determine that it may continue with unchangeable strength on both sides. Furthermore, we concur in that to the same servants of God, the eighth part of the village of Buck with meadows and appurtenances, which the aforesaid stepfather and the mother and the said full brothers have possessed by just purchase, they have transferred to the brethren for their souls' welfare. All agreed on this occasion in order to make it of lawful effect; they even gave every complaint, that any person whatever made against the monastery for any reason, whether on account of the hides (of land), or because they had begun to raise the tithes, into the hands of Lord Walo, Bishop of Havelburg, in presence of Lord Bishop Wolmar of Brandenburg and of Lord Margrave Otto and before many credible witnesses; and they resigned these unanimously, in order that the brethren might henceforth possess a quiet and unchangeable right. Besides this mentioned in detail, we give to the same brethren the continued possibility of undisturbed possession of all, that they today possess from the first donation of the princes, who founded the old monastery. As already stated, this is in the village of Jerichow, the Parish Church with all its rights, further the village of Wulkow and the Parish Church therein, with one hide (of land) in the village of Brist and with all its rights; further another village, called Slavic Wulkow, and no less the aforesaid village of Nizekendorp, excepting 11 hides (of land) therein, as already stated, which are intended for exchange. Further one hide (of land) located in Schollene on the river Boda, that yields 10 solidi. Moreover there shall be secured to them the estate of their Lord Bishop Anselm, to which he added one prebend for them, when he gave them a farm within the old wall Kabelitz, and likewise the village very near thereto, that is also called Kabelitz, of which one of the two was confirmed as a prebend by his successor Lord Walo, 89 when he added for himself to the aforesaid gift his own village named Visica. Thus all this, as it is contained above, with all its appurtenances, income, tithes, pastures, waters,

...the three miles on the bank of the river with the ...
 ...and that all this may be made known to ...
 ...the servants of God may remain undisturbed, then we continue to ...
 ...to each by the aid of the holy Apostles Peter and Paul and ...
 ...the authority of the holy Roman Church, and no loss of ...
 ...so the almighty power and protection in and all the means from ...
 ...inasmuch, we give and peace be given in this life, and ...
 ...and in evil times and would remain true in great peace of ...
 ...the time, shall may be lost with the sinners in eternity. ...
 ...from the presence of God. Amen.

Witnesses of this official act are:--Walter, Bishop of Havel-
 burg; Wolfram, Bishop of Meissen; Sifrid, Bishop of Naumburg;
 Peter, Bishop of the Cathedral Church; Heinrich, Bishop of ...
 ...and ...
 ...from, Bishop of S. Sebastian's Church; Reinhard, Bishop of ...
 ...of Meissen Church. Of the latter; Margrave Otto von Brandenburg-
 burg, with his sons Otto and Heinrich; Burgrave, Burgrave of ...
 ...and ...
 ...of Meissen Church; Conrad, "Countess" of Meissen; Richard ...
 ...and ...
 ...in the year of ...
 ...of the year 1122, that is, in the second ...
 ...when the glorious Lord Frederick was ...
 ...and ...
 ...it is ...
 ...that the two churches now standing are those spoken of in ...
 ...document. This is true; but even so the case for nearly ...
 ...as to the story of ...

forests and bondmen, shall they freely possess; also they shall have the three mills on the bank of the river with the right of fishing there. And that all this may be made known to these in future and at present, we subscribe on this page, and that the servants of God may remain untroubled, then we confirm it to them by the ban of the holy Apostles Peter and Paul and by the authority of the holy Roman Church, and no less by the privilege, that belongs to our humility. But to all, who do good to the aforesaid place and protect it and all its rights from injustice, may grace and peace be given in this life, and may they likewise pass away into future eternal life. But whoever errs in evil views and would injure them in their repose or their interest, if they do not make worthy reparation for their acts, then as I am mortal and as wax flows in presence of the fire, shall they be lost with the sinners in eternity, far from the presence of God. Amen.

Witnesses of this official act are:-- Walo, Bishop of Havelburg; Wolmar, Bishop of Magdeburg; Sifrid, Abbot of Niernburg; Foker, prefect of the Cathedral Church; Heidenreich, prefect of Halle; Gunterus, prefect by God's grace; Hufert, the Havelburg prefect; Reiner, prefect of Liezka; Sifrid, deacon; Heinrich, prefect of S. Sebastian's Church; Balderam, prefect of S. Maria's Church; Albert, Gero, Conrad, Ulrich and Conrad, canons of Magdeburg Church. Of the laity; Margrave Otto von Brandenburg, with his sons Otto and Heinrich; Burchard, Burggrave of Magdeburg; Theoderich of Wichmannsdorp; Sifrid, Burggrave of Arneborch; Bruno von Siersleve; of the ecclesiastic Heinrich of Jerichow of the Magdeburg Church with his son Albert and his brother Rudolf; Conrad, "scultetus" of Magdeburg; Richard and Conrad von Alsleve, and also several others.

But this is given in the city of Magdeburg in the year of the incarnation of the Lord 1172, Epact 23, in the second indiction, concurrent 4, when the glorious Lord Friedrich was Roman emperor, ever famous. Salvation. Amen. "

It is objected, that it is in nowise shown by this document, that the two churches now standing are those spoken of in the document. This is true; but such is the case for nearly all documents relating to buildings, and so one might in general establish no dates of buildings. For as to the story of Gerv-

10/ Gervasius concerning the rebuilding and restoration of the Cathedral of Canterbury, there is scarcely a second one. To consider the passages of the documents alone is not sufficient. But to correlate the proof passages with the buildings and those of the immediate and more distant vicinity affords the certainty lacking in the words of the documents in question.

And indeed, if one compares these brick buildings with each other, that are testified to by documents, then they form a tolerably meshless network. These buildings are the village Church at Jerichow (before 1144), the Monastery Church there, (about 1150), the Monastery Church at Diesdorf (1161), the Cathedral at Brandenburg (1165-6), the Cathedral at Lübeck (about 1172), the Cathedral at Ratzeburg and the village Church at Schönhaufen on the Elbe (1212). These churches exhibit contemporary or more advanced forms. If one desires to assume that none of these buildings is that to which existing documents may refer, then the following improbabilities result. There has been preserved indeed of all churches the first story of their erection; but still all churches were afterwards rebuilt, and indeed I judge at one time, so that nowhere has any narration of these rebuildings been preserved. All these second buildings must further have been built anew in the same sequence in which the first buildings were erected; this is proved by their forms. Finally, the forms of all these buildings would not agree with those likewise dated churches of the neighboring mother country, such as the Cathedrals at Brunswick and Magdeburg. Here is not the place to illustrate these relations, so that the network may show itself without gaps; this evidence will be produced elsewhere.

63. Brick Churches in Netherlands and Upper Italy.

In contrast to this indeed considerable number of Romanesque brick churches of the Mark and the adjacent countries, whose dates are determined or agree with churches proved by documents, the Netherlands and upper Italy are lacking.

In the Netherlands, excepting S. Sauveur at Bruges, whose date is not even fixed, there is scarcely a Romanesque brick church still remaining. But in Italy the documents are entirely wanting, and in particular, it cannot be proved that S. Ambrogio at Milan, S. Michele at Pavia and all other similar

Romanesque buildings are older than the structures of north Germany. Likewise one of the principal buildings, most recalling Italian models, the Cistercian Church at Dobrilugk, is not one of the earliest brick buildings in the Mark, since it can only have originated about the beginning of the 13th century. First of all, the external enclosure of the windows is claimed as Italian (Fig. 158⁴⁸), since it is struck from a centre differing from that of the arch itself; yet this form is also found elsewhere in Germany; thus in the Minster at Aix-la-Chapelle, in Fritzlar and in Werden-on-R. It is further objected, that the slit-like recesses likewise occur on S. Lorenzo and S. Michael at Cremona; yet this will be of less effect, since those recesses in Cremona are of quite different dimensions. The last proof of Italian origin, that the windows were unglazed as in Italy, is entirely erroneous, since also in Italy windows were glazed. Dobrilugk naturally possessed glazed windows, likewise glass in wooden frames, even if no grooves for the glass existed. Finally as already stated, an Italian origin for Dobrilugk proves nothing for the Italian origin of the brick construction of the Mark or of its art forms, since at the time of the origin of Dobrilugk, the fourth or fifth generation of architects were erecting brick structures in the Mark.

Better proofs are the round-arched friezes beneath the main cornices at Jerichow (Fig. 159⁴⁸), on S. Nicolaus at Brandenburg (Figs. 160 to 164⁴⁸); for these date from the first half of the 12th century and seem entirely Italian. The Italians cut such round-arch bricks from clay in the same manner. Thus for example, the different cornices of S. Ambrogio at Milan show this (Figs. 165 to 167⁵²). Moreover for S. Ambrogio cannot be proved with certainty a greater age than for Jerichow.

Note 51. This arched frieze is painted.

Note 52. From Dartein.

64. Production of Moulding Bricks.

The production of moulding bricks during Romanesque art, according to recently instituted investigations⁵³ occurred by means of cutting them from solid bricks with the chisel or out of rude blocks of suitable size in air-dried state; on all moulded bricks may be seen chisel marks. These moulded bricks were

not cut with the chisel just before setting them, as formerly announced. Every attempt in this direction shows the impossibility of obtaining the appearance of a burned brick by cutting after burning, such as Romanesque moulding bricks exhibit; also bricks ~~so~~wrought became more blackened and weathered than the ordinary bricks, whose burned surface is not lost. Besides there likewise occur such bricks as were modeled in a soft condition; for example, these are exhibited by the capitals and tracery in Chorin from the Gothic period. The slab frieze ornamented by plain leaves or scrolls was pressed in wooden moulds, on the contrary. In the Gothic period, most of the moulding bricks were likewise struck in moulds, like ordinary bricks.

Note 53. See Zeits. für Arch. und Ing. 1897. p. 22 et seq.

65. Dimensions.

It is to be stated in regard to the dimensions of bricks, that Romanesque bricks are generally smaller than Gothic. The latter increase to 3.94 ins. height, 5.91 ins. width and 11.80 ins. length, while the smallest Romanesque bricks on the Cathedral at Werden ⁵⁴ are only 1.97 × 4.33 × 10.24 ins.; 10 courses are 27.56 to 29.58 ins. high.

Note 54. Same. p. 32.

66. Bond.

The bond is so chosen, that in each course one header generally follows two stretchers. In the next course, the header is transferred either half a header or three-fourths of a brick.

103 This is the most economical method of facing possible. Taken
104 as a basis, such a facing is only a half brick thick with not
105 too many headers into the masonry behind it. That there are
106 sufficient headers and that this half brick facing conceals no danger is shown by thousands of brick structures in excellent preservation. In countries in which bricks were less common, even split stone masonry was thus faced with bricks. There also commonly alternates a header with each stretcher.

67. Glazing.

A beautiful red color was always employed. About 1200 appeared glazing. Both moulding and common bricks were glazed -- mostly green. With the latter the surfaces were ornamented in chess-board patterns. This surface ornament plays a special

part in Silesia, which practised no pure brick construction; there only the wall surfaces are of bricks, the mouldings and tracery being constructed in cut stone. Also in the Mark, men made use of such surface patterns; very beautiful ones are exhibited by the Cathedral at Brandenburg (Figs. 168, 169 ⁴⁸).

107 The glazed moulding bricks also alternate in the members with
110 the unglazed; on the contrary, horizontal mouldings are entirely glazed.

68. Joints.

The joints are at least 0.39 in. thick, but mostly thicker. They are struct flush and are white. Commonly one or two joint strokes are torn off. If the joints are of unequal width, then the projecting line is colored red. Whether the entire surface of the brick was colored red can only be determined with difficulty.

69. Arched Frieze.

Let us now observe how the detail forms were further developed. We will first stop with the arched frieze. The cornice of the Church of S. Maria at Salzwedel (Fig. 170 ⁴⁸) already exhibits the early Gothic trefoil arch. Of a somewhat later date is that on the western facade of the Monastery Church at Jerichow (Fig. 171 ⁴⁸).

How these forms were later changed in Italy is represented by the cornices of S. Antonio at Padua. (Figs. 172, 173 ⁵⁵).

Note 55. From Essenwein's drawing.

70. Gable.

The gables in roof construction were likewise transformed in accordance with the material. In the beginning, they differ not particularly from gables of cut stone; one example of this is the south gable of the Franciscan Church at Cracow. (Fig. 174 ⁵⁵). The detail form then changed progressively with the art of stonecutting (Fig. 175 ⁴⁸), yet so that the nature of bricks gradually obtained influence; thus we see it on the gable of Lehnin by the use of bricks in diagonal patterns. Then the gable was completely transformed by special details of brick construction, as by the battlement form; the subsequently higher gable of the Dominican Church at Carcow affords a good example (Fig. 177 ⁵⁵). With abundant means, the most expensive solutions were later found in this direction; thus the

western gable of the Dominican Church (Fig. 176⁵⁵) and that of Corpus Christi at Cracow (Fig. 178⁵⁵).

71. Piers in the Interior.

If we consider the transformation of the pier in the interior, we find that the cross section of the piers of the Church in Chorin (Figs. 179 to 182⁴⁸), that date from the early Gothic period (after 1248), show that the brick style until then was always a translation of cut stone forms, which in their early square forms were also very well suited for bricks. The capitals are formed of large pieces and are burned.

The Church S. Johann at Werben originated in the high Gothic period, and on the contrary it exhibits cross sections of piers, that owe their shape to the bricks (Figs. 183, 184⁴⁸). The piers are here made in star shape by means of lesser shaped bricks. If the detail members did not become too small, then such forms have a very charming effect. However, these rich and costly subdivisions of the pier could not supplant the round shafts with four adjacent little columns, since these could likewise be constructed of two or three simple shapes of bricks. Most of the churches in the Mark exhibit these column-piers; thus also one of the latest buildings, the Pilgrimage Church at Wilsnack (Fig. 185⁴⁸).

72. Exterior.

Since bricks render possible a richer surface ornamentation at small cost, than is the case with cut stone, then has also brick architecture made abundant use thereof on exteriors. Indeed it has seldom or never aspired to a "terra cotta" architecture", i.e. employed foliage for such panels; it has remained content with shaped bricks. Commonly, this is in a weak manner and on but one surface and employed without mouldings. Examples are presented by S. Johann's Church at Werben (Fig. 186⁴⁸), S. Martin at Salzwedel (Fig. 187⁴⁸) and S. Johann at Brandenburg (Fig. 188⁴⁸).

S. Stephen in Tangermünde exhibits such surface decorations in artistically better managed pieces. (Fig. 189⁴⁸). Likewise the Castle Chapel at Ziesar (see the adjacent plate) has employed beautifully moulded bricks for its rich ornamental bands. All such shaped bricks are almost exclusively glazed.

One of the few attempts to shape leaves and to thereby com-

compose friezes is shown by the nave of S. Johann at Brandenburg (Fig. 190)⁴⁸.

Besides one may see fresh influences of cut stone art upon brick construction. On S. Catherine at Brandenburg (Fig. 191)⁴⁸ the architect took pains to imitate the rich buttress decorations of cut stone churches; yet the little terra cotta gables are set in an inconsistent way on corbels of likewise weak form, for one to find satisfaction in these details. On the contrary, S. Catherine at Brandenburg possesses in the Fronleichnam's chapel the high poem of brick architecture; above the eaves of the roof, the architect has executed both judicious as well as fanciful tracery structures, which in their details solely owe their existence to bricks and their peculiarities.

b. Brick Churches in other parts of Europe.

73. Silesia and Poland.

As we have hitherto considered only the two domains of brick construction within which bricks influenced and transformed the forms, particularly the north German lowland plain, including Denmark and upper Italy, there further remains a brief examination of the other brick countries of Europe. Yet these have scarcely bricks to produce forms; all members and mouldings are constructed in cut stone; only the great surfaces and the piers are built of bricks. Silesia and southern Poland first exhibit a connected brick domain, whose buildings assume colossal proportions, especially in Breslau. The Cistercian Nuns' Church at Trebnitz, which Duke Heinrich and his wife, S. Hedwig (between 1201 and 1219) had erected, exhibits brick construction in combination, as it maintained itself during the entire middle ages in Silesia; members of sandstone and the walls and piers of brick. It was followed by the Cathedral in Breslau. The Church S. Nicolas there even possesses arched friezes of brickwork.

74. Bavaria.

The third brick region of Germany lies in Bavaria. Munich and Landshut are the chief localities of brick construction. The Frauen Church at Munich and S. Martin's Church at Landshut present equally colossal development in height of the nave as the Silesian churches and almost the same kind of brick construction as the Silesian; particularly in individual forms of

the prince. Stagnant in Alaska as likeable state or land
city of Alaska.

77. Tulum.

The Tulum ruins (see also Tulum in Tulum and Tulum
with Tulum. The ruins of Tulum are in the Tulum
one of the earliest and grandest examples; indeed the
necessity of the landing at Tulum from the end of the 18
century has been proved by the ruins of the city.
From the 14th century date the city walls of Tulum and the
bridge of Tulum. The Cathedral of St. Cecilia at Tulum, which
was built in 1544 and was destroyed in 1844, is
one of the most grandest brick structures of this region (see
the preceding list, p. 64). It is the oldest of the churches of
Tulum, Tulum and the town of Tulum.

The ruins of the Tulum ruins are in the Tulum and Tulum
centuries have a size of about 12.00 x 2.50 x 2.50 m. thick;
the bed joints are generally 1.50 to 1.97 m. thick. The
ruins are made of cut stone.

78. Tulum.

Also Tulum has its brick region. In Tulum are preserved
most massive and interesting towers and other structures from
the time of the high Tulum. In the development of the Spanish
to Tulum, the Tulum ruins are in the Tulum and Tulum
of Tulum, even if they do not equal the buildings
of Tulum. The Tulum ruins are in the Tulum and Tulum
Spain the splendid colored tiles, the Azulejos, were employed
on the exterior in order to confer upon the brick buildings a
another particular charm by their splendor of color. We find
this in the churches at Tulum, Tulum, Tulum, Tulum, Tulum
Tulum.

Brick construction was apparently derived from the Moors,
and it would naturally become one of the few varieties of
which have remained in the modern architecture of Tulum.
The Moors of Tulum have not only built brick construction
but also in the Tulum. The Tulum ruins are in the Tulum
the Tulum, is proved by the thorough description of Tulum
the Tulum, a Tulum in the Tulum.

the bricks. Strasburg in Alsace is likewise more or less a city of bricks.

75. France.

The regions around Albi and Toulouse in France form a great brick domain. S. Sernin at Toulouse from the 12 th century is one of the earliest and grandest examples; further the former monastery of the Jacobins at Toulouse from the end of the 13 th century (see the preceding Heft of this "Handbook", p. 38). From the 14 th century date the city walls of Toulouse and the Bridge of Montauban. The Cathedral of S. Cecile at Albi, that was begun in 1282 but only completed in the 14 th century, is one of the most gigantic brick structures of that region (see the preceding Heft, p. 54). To it are added the Churches of Moissac, Lombes and the Tower of Caussade.

The bricks in this region during the 13 th, 14 th and 15 th centuries have a size of about $12.99 \times 9.84 \times 2.36$ ins thick; the bed joints are generally 1.58 to 1.97 ins. thick. ⁵⁶ Moulding bricks are but seldom found. All mouldings, finials and tracery are made of cut stone.

Note 56. See Viollet-le-Duc. Vol. 2. p. 250.

76. Spain.

Also Spain has its brick region. In Arragon are preserved both massive and interesting towers and entire churches from the time of the high Gothic. In the development of the special brick forms, the Spaniards come nearest to the low plains of northern Germany, even if they do not equal the buildings in the Mark in consistency, nor in abundance and beauty. In Spain the splendid colored tiles, the Azulejos, were employed on the exterior in order to confer upon the brick buildings another particular charm by their splendor of color. We find this in the churches at Saragossa, Tarazona, Baroca, Ternel and Calayatud.

Brick construction was apparently derived from the Moors, and it would thereby become one of the few vestiges of them, which have remained in the mediaeval architecture of Spain. That the Moors on their part did not invent brick construction, but adopted it from the Goths, who naturally learned it from the Romans, is proved by the thorough description of brickmaking in the "Origenes", a book by S. Isidor of Seville (died

636), who lived under the Gothic king Chintilla.

We likewise find brick buildings scattered outside Arragon, as far as Valladolid and Toledo.

CHAPTER IV. OF THE ARTS AND MANUFACTURES OF GREAT BRITAIN.

THE ARTS AND MANUFACTURES OF GREAT BRITAIN, IN THE REIGN OF

EDWARD THE FIRST, were in a state of great improvement. The
arts of husbandry, and the management of the soil, were
greatly improved. The use of the plow, and the method of
sowing, were both improved. The use of the sickle, and the
method of reaping, were both improved. The use of the
threshing machine, and the method of threshing, were both
improved. The use of the mill, and the method of grinding,
were both improved. The use of the distillery, and the
method of distilling, were both improved. The use of the
brewery, and the method of brewing, were both improved. The
use of the tannery, and the method of tanning, were both
improved. The use of the soapery, and the method of
making soap, were both improved. The use of the
candle-making, and the method of making candles, were both
improved. The use of the paper-making, and the method of
making paper, were both improved. The use of the
printing, and the method of printing, were both improved.

The arts and manufactures of Great Britain, in the reign of
Edward the First, were in a state of great improvement. The
arts of husbandry, and the management of the soil, were
greatly improved. The use of the plow, and the method of
sowing, were both improved. The use of the sickle, and the
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Chapter 7. Doorways, Windows and Grilles.

a. Doorways.

77. Arches over Doorways.

The development of church doorways likewise results from the structural requirements. Each wider opening must be spanned by an arch, since lintels break, when constructed of one stone. Sandstone resists breaking in larger pieces when not then dry; it also contracts in drying. When again soaked by rain, it extends, to become again shortened by drying. If it be firmly fixed at both ends or so great a load rests thereon, that it cannot move, it must then crack. Therefore an arch over a wider opening is indispensable. If the wall be thick, there results several recessed courses in the arch, since the need exists for making the opening of the doorway wider externally.

The different recesses were ornamented by hollows and rounds or by means of columns on the jambs. This is the form of the Romanesque church doorway and the ground form of the Gothic. For example, such is shown by the small doorway of Lincoln; (Fig. 192); it presents a good example of the English Romanesque style, which the English name "Norman". Particularly characteristic for this style are the zigzags of the arch and the folded cushion capitals of the columns.

The forecourt of the Abbey Church at Laach possesses a rich doorway in Rhenish Romanesque design of about 1200 (Fig. 193 ⁵⁷); it certainly was not intended to be closed by the leaves of a door. A similar doorway in early Gothic forms is shown by Heiligenkreutz near Vienna, between the chapter hall and the cloister (Fig. 194 ⁵⁷); the architect, who designed it and likewise the splendid vaults, was one of the greatest masters of this powerful early Gothic.

Note 57. From Wiener Bauhütte.

78. Horizontal Lintel with Columns.

But since a horizontal upper ending is desirable for door leaves, the tympanum was closed by cut stone slabs, since it was relieved by the arch, and if the span were great, it was supported by the column at the middle.

For Romanesque doorways, the lower limit of this filling of the tympanum frequently assumed a triangular form (Fig. 195 ⁵⁸) and it was usually accompanied by a moulding along its inclined

The fountain above said was then usually...
kind between them on the southern side of the fountain...
one of the highest accounts from the latest time of the...
Gothic style, that of the Monastery of San Juan (Fig. 199)...
the tower is made into the form of a spiral arch, and...
tower above the spiral arches the free length of the top...
or side.

Fig. 200. From San Juan & San Pedro.
The tower, San Juan & San Pedro.

The tower, San Juan & San Pedro, is a...
(Fig. 199) and of the Cathedral at Toledo (Fig. 198);
not a few other interesting churches.

The tower, San Juan & San Pedro, is a...
tower and extend it above the wall, column or pillars of...
tower in reference of the tower (Fig. 200). This...
account of the tower and tower of San Juan & San Pedro...
mentioned the tower with sculpture; such may be seen...
on the two magnificent towers of St. John and of St. Peter...
as at San Juan (Fig. 200).

Fig. 201. From San Juan & San Pedro.

The tower, San Juan & San Pedro, is a...
tower column with set of four or eight...
tower and tower. These towers usually have two or...
tower. They belong to the tower and tower of San Juan & San Pedro...
of tower and tower, and they appear as two as pillars...
The tower, San Juan & San Pedro, is a...
were erected by the church of the first cathedral tower...
tower of Aragon; for the inscription outside of the doorway is...
as follows:--

"In the year of the Lord 1118 on the last day...
one of the towers of the cathedral of San Juan & San Pedro...
of this church completed, and it was erected by master Juan...
Aragon, in the diocese of Girona. He built the outer side...
with the tower and tower of San Juan & San Pedro...
differs to the other tower, the exterior side of the tower...

top. The tympanum above this was then usually ornamented. To the most beautiful and best known Romanesque doorways of this kind belongs that on the southern side of the Parish Church of Andernach. (Fig. 196⁵⁸). The German Museum at Nuremberg possesses one of the richest doorways from the latest time of the Romanesque style, that of the Monastery of Heilbronn (Fig. 197⁵⁹); the lintel is there made in the form of a trefoil arch, whose lower parts as side corbels reduce the free length of the upper slab.

Note 58. From Dehio & von Bezold.

Note 59. From Essenwein's drawing.

Still richer treatments of the jambs are exhibited by the Gothic doorways of the former Benedictine Church at Trebitsch (Fig. 198⁵⁸) and of the Cathedral at Lübeck (Fig. 199⁵⁸); both stand beneath protecting porches.

The Italian Romanesque doorways quite strongly emphasize the lintel and extend it above the small columns or pilasters of doorway jambs in remembrance of the antique (Fig. 200⁵⁸). This accenting of the lintel encroached on southern France, which ornamented the lintel richly with sculptures; such may be seen on the two magnificent doorways of S. Gilles and of S. Trophime at Arles (Fig. 201).

79. Projecting Porches on columns.

The Italians loved to protect their doorways by porches on slender columns. These columns were set on lions or griffins, almost without exception. These animals commonly have men in their claws. They belong to the most obvious characteristics of Italian mediæval art, and they appear as rude as picturesque. The Cathedral at Trient exhibits two such doorways; they were erected by the successors of the first cathedral architect, Adam of Arognio; for the inscription outside of the doorway is as follows:--

"In the year of the Lord 1212 on the last day - - - under the presidency of the venerable Trient Bishop Fredéric, Count of Wangen, and in accordance with his direction, the building of this church commenced, and it was erected by master Adam of Arognio, in the diocese of Como. He built the outer aisle himself, his sons thereupon his assistants as architects, the additions to this church internally and externally - - - The bu-

burial place of his family is beneath. Pray for them."

A beautiful column base of this kind from the Cathedral at Modena is given by Fig. 202.

Note 60. From Darteln.

80. Decoration by Sculptures.

In the early Gothic period, the richest sculptures were combined with the doorways; small columns and arches were beset with figures. The earliest doorways of such a kind, with approximately determinate dates, are those on the western facade of the Cathedral of Chartres (about 1140). The figures blend with the shafts of the columns in form, on which they are wrought; so elongated and compressed are the forms. Yet the faces show such faithfulness to life as well as excellent modeling and execution, that one does not regard as impossible the peculiar compression of the bodies, but attributes it to a fashion, which squeezed men and women into such poses and clothing. One also finds at about the same time similar long-elongated figures in the ceiling paintings of Schwarzhheindorf near Bonn and of Brauweiler near Cologne. Likewise the contemporary doorways on the south side of the Cathedral of Bourges and on S. Vicente at Avila (Fig. 203 ⁵⁸) exhibit the same forms.

121 The statues later developed into completely wrought and unconstrained figures, whose finest examples adorn the western facade of the Cathedral of Rheims, but these will be described later in treating of the sculpture of those periods.

122 After the middle of the 13th century, the figures are separated from the shafts of the columns and are placed on the jambs between the columns. They previously stood on corbels on the shafts of the columns, but they were now supported by small piers and projections. Such may be seen on Erwin's splendid doorways on the western facade of the Cathedral of Strasburg Minster (about 1280). (Compare the plate adjoining page 198 in the preceding Heft of this "Handbuch."). Rich canopies cover these statues. In the hollows above them are usually placed small seated figures, that in their overhanging poses are not happy, according to modern design.

At first winged busts of angels were frequently employed in these places, a far better solution. The figures in the

fixed in place by iron anchors.

III. The Shrine

Basically understood as the source of development of the
tyranny. At first, thus after the bridge of the 12 to con-
tury, great and united ideas and desires were expressed in
this place. The salvation of the world was either envisioned
as the world's peace, surrounded by the four evangelists in
the middle scene, on the Madonna with the Child Jesus on a
her horse sits on a throne, surrounded by angels on the 12-
th and 13th. The shrine is the source of the tyranny of the tyrant
of the 12th century, Paris etc.

The shrine is the source of the tyranny of the tyrant of the 12th century.
It represented the coronation of Maria by her divine son.

at right and left being two psychic angels; in the second
tyranny is shown the death of the Mother of God in the 12-
th century. The tyrant of the 12th century is the tyrant of the 12th century.
about 1200, and with the stages of the "tyranny" and of the
tyranny of the 12th century, the tyrant of the 12th century is the tyrant of the 12th century.

The shrine is the source of the tyranny of the tyrant of the 12th century.
1280) still presents in a later time a beautiful and anti-
ed mastery of its tyrannism. The Madonna with the Child is
surrounded as standing in the middle, revered by two angels
on the right and left; the background is filled with roses
on one half and vine leaves on the other.

The shrine is the source of the tyranny of the tyrant of the 12th century.
various above even more, in which is usually represented
the tyrant of the 12th century and the tyrant of the 12th century.
deviations are minimized; the first tyrant consistently po-
come earlier and less gracefully. Finally, the entire design
consists of a few lines of authority and authority.
representations of little figures of less beauty, and which
are more in the last part of the tyrant, the tyrant of the 12th century.
and the tyrant of the 12th century, the tyrant of the 12th century.
the tyrant of the 12th century, the tyrant of the 12th century.

125 arches were first wrought on the voussoirs, just as the sta-
 126 tues were cut in one piece with the shafts of the columns.
 The small figures were separately cut afterwards and were
 fixed in place by iron anchors.

127 81. Tympanums.

Equally unfortunate is the course of development of the tympanum. At first, thus after the middle of the 12 th century, great and unified ideas and designs were executed in this place. The Saviour of the world was either enthroned as the world's judge, surrounded by the four evangelists in the middle space, or the Madonna with the Child Jesus on her bosom sits on a throne, worshipped by angels on the right and left. This may be seen on the doorways of the Cathedral of Chartres, Paris etc.

In one of the southern doorways of the Strasburg Minster is represented the coronation of Maria by her divine Son, at right and left being two praying angels; in the second tympanum is shown the death of the Mother of God in the presence of the 12 apostles. Both representations date from about 1200, and with the statues of the "Church" and of the "Synagogue" below them, they form the pearls of the rich ornamentation of the Strasburg sculptured treasures.

The doorway of S. Elisabeth's Church at Marburg (about 1280) still presents in a later time a beautiful and unified mastery of its tympanum. The Madonna with the Child is arranged as standing in the middle, revered by two angels on the right and left; the background is filled with roses on one half and vine leaves on the other.

Then men commenced to subdivide the tympanum into separate divisions above each other, in which is usually represented the whole story of the life and sufferings of Christ. These divisions are multiplied; the little figures continually become smaller and less graceful. Finally, the entire design properly consisted of a long band of scarcely recognizable representations of little figures of less beauty, and which were carved in the length required. Any consideration of the form and dimension of the tympanum was entirely neglected for these figures. Even the great architects of the late Gothic brought no change in these bad conditions.

82. Perforated Tympanum.

It occurs exceptionally, that the tympanums were perforated. This is shown by the principal doorway of the western facade of Rheims Cathedral, whose tympanum lighted the interior through a rose window (see the preceding Heft of this "handbook", page 197). A similar arrangement is found at Lentschau in Austria (fig. 204 ⁶¹).

Note 61. From Wiener Bauhütte etc.

b. Leaves of Doors.

83. Bronze Leaves of Doors.

The oldest leaves of doors that have been preserved are of bronze. Men loved from ancient times to lavish the greatest splendor on bronze leaves of doors. There hang today in the Minster of Aix-La-Chapelle those, which charlemagne had cast about 800; they are subdivided into panels, and the separate enclosing mouldings are ornamented by antique rows of leaves; they have no sculptures.

On the contrary, the doors that S. Bernward caused to be cast about 1015 for S. Michael's at Hildesheim, and which were transferred by his successor to the Cathedral, are entirely covered by representations from Holy Scripture, from the creation of Eve until the appearance of the Resurrected One before Maria Magdelene (Fig. 206 ⁶²). The modeling naturally leaves much to be desired; but the casting is very well done. The inscription on the leaves runs as follows:-

Note 62. From Guna's drawing.

136 "In the year 1015 of the incarnation of the Lord, Bishop Bernward of blessed memory had these cast door leaves hung on the front of the Temple of the Angel in memory of himself"

How little progress the art of modeling made during the Romanesque period in Germany and Italy may be seen on an eastern doorway of the Cathedral at Pisa from the beginning of the 12 th century, that still presents such awkward representations.

137 • Another mode of ornamenting bronze doors is found on the doors of S. Marco at Venice; the so-called art of damascening or inlaying. In the bronze surface are incised the outlines of the figures and in these sunken lines are bedded silver wires; faces, hands and feet are represented by sil-

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...in the West and was again introduced by the Egyptians.

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entire silver plates, in which the corresponding drawings are engraved. This art appears to have not been retained in the West and was again introduced by the Byzantines. First in the 15 th century in Italy, Germany and France was practised this art of damascening for weapons and armor. The two panels given in Figs. 207, 208 ⁶³, from the doors of S. Marco indeed date from the beginning of the 12 th century, since the following inscription is found on one of the doors:-- "Leo da Molino ordered this work to be executed", and this Leo da Molino was procurator of the church of S. Marco in 1112.

Note 63. From Camestina, A. Die Darstellungen auf der B Bronzethüren des Haupteinganges von S. Marco in Venedig. Vienna. 1860.

84. Wooden Leaves of Doors with Wrought Scrolls and Network.

The second and most widely extended kind of door leaves are those of wood. They are flat on the external side exposed to the weather. Vertical planks are fitted together closely and then nailed on a frame of horizontal pieces and struts, which lies on the inside. Then the external surface of the door is generally covered by a richly wrought iron scroll work and network, that either starts from the hinges of the door or is independently attached to the surface of the door.

These door fastenings are wrought, i.e., are forged on the anvil from glowing iron by the smith's hammer and then welded together. For example, if a leaf is to be made, this is then usually forged from a bar of marketable iron, thus generally of rectangular cross section. By this forging the leaf becomes thin and even flatter toward the edges, while the bar or stem generally retains the high rectangular section. Thereby result body, light and shade in the smith's work, and one can at once see, whether the leaf is wrought or is cut out of a plate. These leaves, scrolls and flowers (Fig. 209) were then welded on the great scroll or the fastening, and indeed so that from the great bar smaller stems curve out to receive those welded leaves. The holes for the nails were punched while hot; the iron was dented

or swelled thereby, and thus originate all the forms characteristic of smith's work. By doubling and overlaying any degree of richness might then be produced.

Since in such works the iron must be placed in the fire very frequently, it is burned, if it is the ordinary wrought iron smelted by a fire of mineral coal. It was only made in the middle ages by charcoal. This still occurs in Sweden, and therefore iron from thence is preferred for art works in wrought iron.

Note 64. From Viollet-le-Duc. Vol. 8. p. 306, 307.

The 13th century has left a great abundance of such iron-work. The greatest works of this kind are those of the western facade of Notre Dame at Paris; they form the unexcelled climax of the art of smith's work for all times. Fig. 210⁶⁵ shows the iron work from S. Martin's at Angers. Figs. 211 and 212⁶⁶ come from the Cathedral of Sens, and Fig. 213⁶⁷ is from Brunswick. From the 14th century is the iron work from Lahneck (Fig. 214⁶⁸). From a very much later time, indeed only after 1500, dates the iron work in Fig. 215⁶⁹, which is to be found in the Germanic Museum, that already employs the ugly hacked-out imitation of stems and branches. On the contrary, the iron work from the upper Chapel at Schnaaz (Fig. 216⁷⁰) shows a quite masterly arrangement of the lines.

Note 65. From Viollet-le-Duc. Vol. 8. p. 300.

Note 66. From Annales Archaeologiques. 1851. p. 133.

Note 67. From a photograph from the art publisher George Behrens of Brunswick.

Note 68. From Gatlhabaud, J. L'Architecture etc. Paris. 1858.

Note 69. From Essenwein's drawing.

Note 70. From Wiener Bauhütte etc.

85. Complete Covering with Iron, Linen Cloth etc.

Besides this iron work, there occurs an entire covering of the door with wrought iron. Particularly inner doors, ¹⁸³ that were to be protected against burglary, received such a wrought plating. Flat bars are usually applied diagonally and the intervening squares or lozenges are filled by coats of arms or ornaments. Thus the door from Nuremberg in the Germanic Museum (Figs. 217 to 219⁷¹) and the details from

Cracow in Figs. 220, 221 ⁷¹.

*Note 71. From Essenwein, E. Die mittelalterlichen Kunst-
denkmale der Stadt Krakau. Nuremburg. N. d.*

Internal doors were also frequently covered by linen or parchment, coated and painted. Such are found on the door from Frisach in Fig. 222 ⁷²; S. Nicolas is drawn in simple black outlines on the parchment. This door dates from the second half of the 13th century and the escutcheon from the 15th.

Note 72. From Mitth. der central-Commission etc.

86. Artistic Joinery and Wood Carving.

Besides this mode of decoration of doors by wrought iron work, there was developed from the beginning the treatment of doors by artistic joinery and wood carving. This has been preserved from the Romanesque period in the most lavishly executed doors; thus in S. Maria - im - Capitol at Cologne (Fig. 223 ⁷³); their design is just as noble as finished; the rounds and interwoven bands are skilfully applied, and the knobs project freely into the air; the sculptures are naturally less successful. These doors date from the end of the 12th century. To the same time must belong the door of S. Hedal's church in Valdres (Norway), with its with its luxuriant scrollwork (Fig. 224); it exhibits the interlaced animals known from the Irish manuscripts and translated to wood. Therefore this kind of ornamentation appears to have not belonged to the Irish alone, but to have been common to Germans and Irish.

Note 73. From Aus'm Weerth, E. Kunstdenkmäler des christlichen Mittelalters in den Rheinlanden. Div. 1. Vols. 1 - 3. Leipzig. 1856 - 1880.

The door from S. Anastasia at Verona (Fig. 225 ⁷²) exhibits the internal doubling, wrought into a uniform and beautifully designed pattern by means of cut-outs and rosettes. A particular treatment of such doublings peculiar to the Tyrol is presented by the door in Figs. 226, 227 ⁷⁰; this solution is just as beautiful as reminiscent (of Germany). The richest sort of such doubling is shown by the door of S. Lorenz in Nuremberg (Fig. 228 ⁶⁹). In all divisions of Gothic are found similar leaves of doors.

Fig. 229 ⁷⁰ illustrates a very skilful solution, showing how in the great leaves may be inserted the very necessary small doors for passage. Very little attention was usually paid thereto, or it is not expressed artistically.

Finally, the door from the Cathedral at Salzburg (Fig. 230 ⁷²) presents a quite different arrangement, which may have the greatest effect if artistically managed; it is found on the Capuchin Church there, lacking two of the apostles.

87. Door Pulls and Knockers.

Mediaeval doors very commonly have door pulls or knockers. Lions' heads with great rings in their mouths are usually employed for these. They are made of both bronze and of wrought iron. Romanesque art already exhibits very beautiful examples of such heads. The door pull from Alpirsbach given in Fig. 231 ⁶⁹ is less beautiful than characteristic of that period. Fig. 232 shows the Pomeranian pull; this door pull is on the Palace Church at Stettin.

c. Windows.

88. Early Christian Windows.

The Christian House of God had windows, in contrast to the antique temple, which was evidently lighted when the door was opened; under the penetrating sunlight of the southern sky, this sufficed, and men were also accustomed in the dwellings to admit light by opening the door or by drawing aside the portiere. To this is indeed attributed the particular height of the temple doorway.

On the contrary, the Early Christian churches all had windows, and these windows were very large. Since these dimensions were not always required under the southern sky, as shown by the later Romanesque and Gothic churches of the south, they could not be filled with semitransparent glass. If one assumes that these windows were so large on account of the perforated slabs with which they were filled, this will not seem a very intelligible procedure. According to this, great openings were made in order to close them again. (Figs. 233 to 255 ⁷⁴). These perforated slabs are apparently placed only in small openings. The largest window openings were closed by a wooden framework (Fig. 236 ⁷⁴). This

and the same holds in the case of the other two churches.

viewed from the interior a window (fig. 25). In a
view from the exterior (fig. 26) the window is seen
as a small opening in the wall. The window is
situated in the wall of the church. The window is
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may be seen today in the Church S. Sophia at Constantinople, and there have also been found during the last restorations in S. Apollinare in Classe in Ravenna the remains of such a window lattice within a walled-up window (Fig. 237). In these wooden lattices were probably first set mica (*lapis specularis*) or horn. Later were found therein thick plates of Roman glass, as they have been preserved here and there; (Pompeii); these are similar to our rough glass plates in thickness and transparency.

Note 74. From Dehio & von Bezold.

Note 75. From Revue de l'Art chrétien. 1893. p. 446

89. Romanesque Windows.

On the contrary, the window openings were very much diminished in the Romanesque period, and one may properly state, that to produce a true Romanesque architectural impression small windows are required. First in the late Romanesque age did the window openings again become large; these were then certainly subdivided by a strong wooden framework. Such a wooden window (Fig. 238⁷⁵) has been preserved in Notre Dame at Chateau-Landon.⁷⁶

Note 76. See Note 75.

This wooden frame was not set in a rebate but free in the splayed jambs.

That such wooden frames do not represent the climax of monumental effect is clear. These frames were later made of iron. The Gothic then invented the noblest expression for them; the stone tracery. While the wooden frames have decayed almost without exception, the exaggerated stone tracery of the late Gothic has endured for centuries. It was a great step backward, when the late Renaissance and the Rococo again introduced wooden tracery and made it the most conspicuous characteristic of their creations. Four centuries have sufficed to so injure those extensive wooden windows in spite of the best coatings of oil paint, that the sash bars with the glass have become curved and bent.

That church windows since the Merovingian period were glazed is shown by documents. Poor churches and bad times indeed availed themselves of stretched cloth, as such is stated in regard to Tegernsee; yet these were exceptions. Nu-

Numerous passages of writers testify to the general knowledge of glass and the thorough glazing of church windows. To bring these proofs here is forbidden by the scope and purpose of the present Heft.

The window openings of Romanesque churches were almost all round-arched at top, and they mostly had splayed jambs. The sills were but little or not at all splayed, not even in German Romanesque churches. The window splays first occurred very late in the 12 th century.

90. Gothic Windows.

In the Gothic the windows were taller, and they were placed in pairs beside each other. Then these two windows were covered by a common pointed arch, and the dividing pier was then gradually made narrower. Finally a circle was perforated beneath the common pointed arch. In such wise the window tracery was apparently invented. The Cathedrals of Soissons, Laon and Chartres show the path marked out. In the choir chapels of the Cathedral of Rheims is then preserved the first fully developed and dated tracery (after 1211); it is the same that the Liebfrauen Church at Treves (1227) and S. Elisabeth's church in Marburg (1235) possess.

91. Window Mullions and Jambs.

The window mullions have cross sections greatly varying in richness. First must be on the right and left a groove or rebate for the glass, that receives the glass sheets. Two plain surfaces with a fillet on the front form the simplest mullion. On the front side is generally placed a round or a slender column. Since the glass sheets are connected by lead bars and cannot be much over 10.76 sq. ft. in area, in order to be safe from bending, the greatest distance between mullions is not to be taken at over 3.28 ft. Therefore the clear distance between mullions varies between 1.97 and 3.28 ft. In French Gothic, between each two mullions is generally employed a vertical iron bar, so that the distance between mullions is greater than in Germany and in England.

On the jamb is usually repeated the mullion so far, that the front fillet or the small column is entirely retained. For wider windows, the mullions are not all made of equal

width; some wider mullions are arranged, which repeat the narrower ones at their sides as on the jambs. They were usually termed "old" and "young" jambs.

92. Tracery.

The window tracery of the Cathedral at Amiens in Figs. 239 to 241 exhibits the details of such early Gothic tracery windows, represented by the master hand of Viollet-le-Duc. The tracery of the choir window is constructed with a single mullion, that of the window in the middle aisle (about 1235) consists of large and small mullions. The large mullions form the two great pointed arches together with the circle above them and the great internal enclosing pointed arches; they have a round externally and internally. Where the different arches are tangent, the two mullions unite in one; only very seldom do the two mullions continue beside each other. The narrow mullions do not here join the wide ones vertically so that their round remains; this disappears in the rebates of the principal mullion. The different cross sections show how the cusps and mullions are joined together. The separate parts of this tracery form arches.

Note 77. From Viollet-le-Duc. Vol. 6. p. 324 - 328.

At the window of the transverse aisle is then effected the junction of the main and side mullions in a consistent way, so that the round of the side mullion also continues in the vertical parts. Since the glass sheets must also be arranged in suitable forms, these clear openings are divided by iron bars. The vertical openings must likewise be subdivided at about each yard by cross bars, the so-called storm bars. They also serve to keep in place the tall and slender mullions.

If one desires to design such tracery, then must one first sketch in the centre lines of all mullions.

The further the Gothic progresses, the more slender becomes the tracery. Its forms are there transformed in easily recognizable ways, so that the date of the building may be determined very well thereby. The tracery from the sacristy of S. Gereon at Cologne in Fig. 242⁷⁸, which must have been designed about 1280, belongs to the most charming among the extremely varied masterworks of that creative age. The eas-

eastern windows of the transverse aisle of S. Nazaire at Carcassonne (about 1320; Fig. 243 ⁷⁹) exhibit the change in the treatment of the forms, such as occurred in France in the time of the high Gothic. Three different sections of mullions are employed, the weaker of which always half disappear by joining the principal mullion. The cusps are formed by the smaller mullions. The stone bars have special dowells, where the pass through the mullions.

Note 78. From Wiener Bauhütte etc.

Note 79. From Viollet-le-Duc. Vol. 6. p. 335.

The slightly later window from Zwettl (1343-1348) illustrates the forms of that age in Germany (Fig. 244 ⁷⁸). Since the window is in six divisions and is of colossal height, the architect Johannes has constructed a strong middle mullion, that repeats the jamb. He thereby obtains an unusual but powerful arrangement of the mullions.

The windows of the nave of S. Stephen at Vienna (after 1359; see the plate adjoining page 156 and Fig. 245 ⁸⁰) stand independent of each other. Here the tracery as blind tracery covers all surfaces; thereby is created a wealth of ornamentation and of chiseling as in no other style. Figs. 245 and 246 ⁷⁸ give the ground plan of one of these windows and the elevation of the corresponding sill at a greater scale.

Note 80. From Allgemeine Bauzeitung.

The tracery of the Chapel at Donnersmark (Figs. 247, 248 ⁷⁸) shows the transition to the pointed and oval patterns of the 15th century, the late Gothic. In this time the little columns in the tracery entirely disappeared; only hollows form the slender mullions. The window from Oberhölz in Steiermark (Fig. 250 ⁷⁸) date from 1430 and thus stands at the end of the development. In the interior of the church, the architect is represented on a corble with the following inscription beneath:-- "This have I, Hans Jersleben, completed with pious care. This indeed occurred after Christ's birth 13 hundred years and in the 30th year. God help us all and the legions of angels. Amen. So may it be."

93. Rose Window.

The middle ages developed a particular kind of window, t

the post or wheel window. First in the appearance period occurring easily circular windows. They later took the form of those were inserted in the wheel windows (fig. 2). These rose windows gradually increased to colossal dimensions. The French Gothic especially loved them. There is a mosaic in a cathedral, that did not possess such a model window in the north of its northern France. The rose window at Paris already has a rose window of 31.5 ft. diameter in its western facade; the thirteenth have less windows 25.5 ft. diameter. The strength of the stone window was 10 ft. or greater (1924). The best known rose window is indeed the window on the Münster at Bamberg (after 1100); the rose window on the Münster at Bamberg (after 1100); the rose window on the Münster at Bamberg (after 1100).

Note 81. From Paris & non devald. The rose window of the Cathedral in the German of S. Germain-en-Laye (after 1240; fig. 25) has a diameter of 28.48 ft.; it already exhibits a peculiarity, that was repeated later; it is not merely a great circle; the four segments of the enclosing square are also covered. The rose window should be mentioned before the circle and a window still covered would be suggested. But likewise in a rose window of (perhaps the other) windows were covered; then this window theory must be distinguished from the inner-rose window. A comparison also points to the side story and the theory. There also appear the rose window of this S. Germain-en-Laye and those of S. Germain de Paris.

Note 82. From Viollet-le-Duc. Vol. 3. p. 27. The execution of such colossal windows of such height presented great difficulties. First of all, entirely different forces act in the lower part of such rose windows than those in the upper part. The stonecutting must therefore be arranged with the greatest care. The iron window bars carried everything to it. In this rose window had a 10 ft. height effect on the structure by their weight and force. The rose window of S. Germain is indeed decorated with a 10 ft. height effect on the structure by their weight and force.

the rose or wheel window. First in the Romanesque period occurred small circular openings. They later took the form of the quatrefoil. When tracery was invented, perforated slabs of stone were inserted in the wheel windows (Fig. 249⁸¹). These rose windows gradually increased to colossal dimensions. The French Gothic especially loved them. There is scarcely a cathedral, that did not possess such a radial window in the middle of its western facade. Thus Notre Dame at Paris already has a rose window of 31.5 ft. diameter in its western facade; the transepts have rose windows 48.56 ft. diameter. The architect of the south transept was Jean de Chelles (1263). The best known rose window is indeed Erwin's on the Minster at Strasburg (after 1277); see the plate adjoining page 198 in the preceding Heft of this "Handbuch").

Note 81. From Dehio & von Bezold.

The rose window of the Chapel in the Chateau of S. Germain-en-Laye (after 1240; Fig. 251⁸²) has a diameter of 33.46 ft.; it already exhibits a peculiarity, that then appeared common in Champagne. It is not merely a great circle; the four spandrels of the enclosing square are also opened. That the spandrels should be perforated below the circle and a window sill created would be suggested. But likewise in some regions of Champagne the upper spandrels were opened; then this window tracery must be independent from the internal side arch. A horizontal slab rested on the side arch and the tracery. Thus also appear the nave windows of this S. Chapelle of S. Germain-en-Laye and those of S. Urbain at Troyes.

Note 82. From Viollet-le-Duc. Vol. 8. p. 57c

The execution of such colossal networks of stone naturally presented great difficulties. First of all, entirely different forces act in the lower half of each rose window from those in the upper half. The stonecutting must therefore be arranged with the greatest care. The iron window bars indeed form a powerful network of anchors; but one cannot entrust everything to it. In time these anchors had a very injurious effect on the stonework by their rusting and swelling. The rose window of S. Germain is indeed designed very favorably for its durability, since the ring of circles in-

the other hand, for all the little columns to have their own axis toward the center does not appear quite appropriate. The rose window from the fragment of Westmannaeyjar Abbey at London (fig. 258) exhibits the usually very favorable development from the center toward the circumference. The setting of the radii is effected by pointed arches inserted between them.

The two small rose windows from Westmannaeyjar (figs. 259, 260) are also of the same type. These are only constructed by means of a single cross section, really only perforated stone slabs, like the centers of such rose windows in Gaster and Gaster. It, but certainly none in the most characteristic stonecutting.

4. Gaster.

24. Romanesque and Early Gothic Grilles.

Grilles have been preserved from the early times. Romanesque and Gothic to have been their origin of bronze, as shown by those in the Museum at Aix-la-Chapelle from the time of Charlemagne; hence they were later made of iron. The window grille in fig. 261 from the Romanesque Church at Bruges (Belgium) is one of the few remaining Romanesque grilles in wrought iron.

Fig. 262, from Viollet-le-Duc, Vol. I, p. 60, 61, 62, 63. Even from the early Gothic we now know but few wrought iron grilles. From the remains in St. Pierre near Paris, of which Viollet-le-Duc reproduces those in figs. 263 and 264, they date from the end of the 12th century. Most exhibit different modes of construction. One grille consists of separate solid scrolls set round each other and held together by bands; thus the scrolls have some continuity. In the second grille, the scroll work is riveted on a single iron base, so that they alone take the grille shape.

The grille on the tomb of the Countess of Verona (fig. 265) is composed in a manner similar to the first mentioned grille from St. Pierre, while the extreme ornamentation out into the 14th century, exclusive of the marble.

intercepts and stiffens the radials in the best way. On the other hand, for all the little columns to have their capitals toward the centre does not appear quite appropriate.

The rose window from the transept of Westminster Abbey at London (Fig. 252) exhibits the usually very favorite development from the centre toward the circumference. The stiffening of the radials is effected by pointed arches inserted between them.

The two small rose windows from Strassengel (Figs. 253, 254 ⁷⁸) show two of the most charming creations of the German high Gothic. These are only constructed by means of a million cross section, really only perforated stone slabs, like the earliest of such rose windows in Chartres and Gelnhausen, but certainly here in the most ornamental stonecutting.

d. Grilles.

94. Romanesque and Early Gothic Grilles.

Grilles have scarcely been preserved from the early times. Romanesque art appears to have made them chiefly of bronze, as shown by those in the Minster at Aix-la-Chapelle from the time of Charlemagne; hence they were later melted down. The window grille in Fig. 255 ⁸³ from the Romanesque Church at Brede (Gironde) is one of the few remaining Romanesque works in wrought iron.

Note 83. From Viollet-le-Duc. Vol. 6. p. 60, 61, 64, 68.

¹⁵⁶ Even from the early Gothic age now remain but few wrought ¹⁵⁷iron grilles. Thus the remains in S. Denis near Paris, of which Viollet-le-Duc reproduces those in Figs. 256 and 257 ⁸³); they date from the end of the 12th century. Both exhibit different modes of construction. One grille consists of separate solid scrolls set beside each other and held together by bands; thus the scrolls here alone cause durability. In ¹⁵⁹the second grille, the scroll work is riveted on strong iron bars, so that they alone make the grille stiff.

The grille on the Tomb of the Scaliger in Verona (Fig. 258 ⁸⁴) is composed in a manner similar to the first mentioned grille from S. Denis, while the separate ornamental quatrefoils were held together by bands. It originated about 1380; its height is 8.53 ft., exclusive of the marble base.

produced too few essential imitations of necessity. First, the
from the experience of S. Davis near Paris is an example of
the transformation of wrought iron work. The late Gothic
first left essential points of its art. Thus the upper part
of a statue in the City of Paris (Garon at Paris) (see the ad-
ditional plates) attains a more picturesque design and a more
skilled and more in wrought iron. The statue is more part-
ern of the period has a favorite design the statue is more a-
ter, and the effect is always good, since it is correctly
constructed, namely by imitated work. The statue has a
the not finished sculpture and then riveted, + have made by
the modern locksmith's art with the help of all modern
means of knowledge and a construction of all possible
size of the material, - but one series of iron is passed in
through holes punched not in the metal. By these holes
more while not, the same are placed at these places and
give to the whole a pleasing effect of light and shade. T
these statues still remain with their essential color charac-
teristic.
Yet another beautiful statue (fig. 280) has been pres-
ented in this church. The entire area of each part is fill-
ed by face sculpture; the helms have a fixed frame, held
by an entire arm.
These statues in the late Gothic wrought iron work were
the steel ones (fig. 281), which introduced the iron's color-
ing. The 281 is from the former representation in sculpture,
which was entirely composed of wrought iron work.

84. *From Mitth. der Central-Commission etc.*

~~The 951st Lateri Windows.~~

The high Gothic period, always dry and inartistic, at most produced too few beautiful imitations of tracery. Fig. 259⁸³ from the Magazines of S. Denis near Paris is an example of the transformation of wrought iron work. The late Gothic first left graceful proofs of its art. Thus the upper part of a grille in the City Parish Church at Hall (see the adjoining plate) affords a both picturesque design and a most skilful art work in wrought iron. The simple lozenge pattern of the panel was a favorite during the entire middle ages, and its effect is always good, since it is correctly constructed, namely by inserted work. The separate bars are not finished together and then riveted, but thus made by the modern locksmith's art with the neglect of all requirements of workmanship and a contradiction of all peculiarities of the material, - but one series of bars is passed through holes punched hot in the other. By these holes made while hot, the bars are widened at these places and give to the whole a pleasing effect of light and shade. These grilles still gleam with their beautiful color ornamentation.

161 Yet another beautiful grille (Fig. 260⁷⁸) has been preserved in this church. The entire area of each half is filled by free scrollwork; the halves have a fixed frame, held by an oblique bar.

Great favorites in the late Gothic wrought iron work were the great cross flowers, which surrounded the bishop's crozier. Fig. 261⁸⁴ is from the former tabernacle in Feldkirch, which was entirely constructed of wrought iron work.

Chapter 8. Glass Painting.

96. Glass.

Glass was made from the Roman period in Gaul, Spain, Italy and Germany, wherever these were conquered by Christianity and civilization. The windows of churches as well as of dwellings were closed therewith. This was the innovation, which after the invasion of the Roman empire by the Germans, they introduced in the use of glass. The Romans indeed were acquainted with windows closed by glass; but they scarcely possessed windows in our sense; their temples were chiefly without windows. With them as with the Greeks, the interior of the temple was probably lighted only by opening the doors. In ruder countries this paradisaical arrangement naturally did not occur. Thus we see windows on the representations of Roman settlements in Germany; but these windows are small and are placed on high, so that they could not serve for looking out. In the excavations of ancient Roman villas, the walls of the house were found still standing to a height of about 6.56 ft., but no window openings were in them; on the contrary, in some places melted glass lay at the foot of the wall, the remains of windows placed on high.

Under the rule of the Germans, these windows were brought lower and placed next the street, so that they first became among the Germans in all countries, what they are today. Likewise after the appearance of the Early Christian style of architecture, the churches received windows.

The glass was made in continually heated furnaces during the middle ages and brought into commerce in large blocks. Hrabanus Maurus writes thereon as follows in his work "De Universo" at about 830:--

"Book 17. Chapter 10. On Glass.

It is called glass because on account of its transparency the light may pass through it. For in other metals is concealed something contained therein; but in glass is a sap or substance, apparent externally as it is internally, and since it is always also inclosed, it stands open. ----- Soon, as the intellectual striving causes, men were not satisfied with glass alone, but they practised this art with other mixtures. It is smelted with light and dry wood; af-

after the copper is separated, and in continually fired furnaces it is made fluid like ore and blocks are produced. Afterwards it is melted from these blocks in the workshops and either shaped by plowing or by turning. Otherwise it is wrought like silver and also colored in many ways, so that it is made like hyacinth and green sapphires and in colors like onyx and other precious stones. Also nothing is more suitable for mirrors than this. Yet the greatest value is in the pure glass, that approximates most nearly to crystal. Therefore as may be wished, it has supplanted the metals of gold and silver. Glass has been made for a long time, both in Italy and in Gaul and Spain; the softest white sand is ground in mortars."

Thus men possessed constantly fired furnaces for making glass, prepared solid blocks and sold these to those engaged in the industry. It is likewise deduced from this, that men already possessed about 830 colored glass under the same names, that Theophilus employed. But also about 520 in the time of the Goths; for Hrabanus depends in his "De Universo" upon the work "Origines" of S. Isidore of Seville (died 636), who wrote under the Gothic king Chintilla. Thereby is fully proved the continued manufacture of glass. There are further a great number of proof passages relating to the glazing of secular as well as of church windows in all the countries between 600 and 1000 A. D., which have heretofore been overlooked, and therefore an entirely erroneous representation of the civilization of those ages has been produced.

97. Origin of Glass Painting.

Glass painting is a very ancient discovery. Written evidence already exists from the 9th century. In the second description of the life of S. Ludger, bishop of Münster, who died in 809, it is stated, how a blind woman received sight during the evening divine service. (This "Life" is to be found in the Royal Library at Berlin, folio 28b, and it was composed shortly after 864⁸⁵).

Note 85. See *Repertorium für Kunstwissenschaft*. 1880. p.461.

166 "For she first cried out joyfully, that she could see the burning lights; thereupon as the morning dawn already appeared and the light gradually shone through the windows, she commen-

commenced to trace the figures in them with her finger."

It is said of Benedict III, who restored in 856 the Church S. Maria in Trastevere at Rome:-- 86

Note 86. See Muratori. *Rerum Italicarum Scriptores*. Vol. 3 p. 257. Milan. 1723.

"But he decorated the windows with glass colors and mosaic painting."

From Rheims, Richer tells of archbishop Adalbert (968-989), that he richly ornamented his cathedral.⁸⁷

Note 87. See Richer's *historiarum quatuor libri*. Book 3. Chapter 23. p. 262. Rheims. 1855.

167 "Which he lighted by windows, that contained different stories, and he made resounding with roaring bells."

The Chronicon of S. Benigni Divionensis states of Dijon at about the year 1001:- 88

Note 88. See D'Achery. *Spicilegium sive Collectio veterum aliquot scriptorum*. II. p. 383. Paris. 1723.

"The holy virgin Paschasia, - - - since she adhered firmly to the faith of Christ, she was first punished by the disgrace of the prison, and was later sentenced to be beheaded on account of her confession of the Deity, as a glass window, made in ancient times and remaining until our age, shows in beautiful painting."

It is indeed not to be determined when this chronicle was written.

From Tegernsee has been preserved from about the year 1000 the following letter of thanks. (The writer of the letter, Abbot Gozbert, presided over the monastery from 983 until 1001.⁸⁹

Note 89. See Pez & Hüber. *Codex diplomatico-historico*. Vol. 6. Part 1. p. 122. Vienna & Graz. 1729.

"To the most worthy Count Arnold, who is everywhere made known by the fame of his manifold virtues, the Abbot Gozbert and the Convent of the brethren committed to him, diligence in prayer and salvation in the Lord.

168 The relation of the most faithful attachment, that toward us and ours have been maintained by you for so long a time, untiringly by various labors and great services, may the all recompensing God, at the request of his holy confessor Quirin, repay most graciously with hundredfold multiplied by hundreds, b

before the heavenly hosts. We rightfully pray to God for thee, who hast elevated our place with such veneration, as is neither known to us from the times of our forefathers, nor might we ourselves hope to see. The windows of our church have so far been closed with old cloths. In thy fortunate age has first the golden-haired sun shone upon the pavement of our basilica through the colored gleam of paintings, and the most varied joys penetrated the hearts of all observers, which were altogether astounded by the variety of the unaccustomed art work. Therefore as long as men see this place adorned in such wise, in thy name will be written solemn prayers day and night. And thereby henceforth all thy relatives will be remembered here, if their names be only written on parchment and sent to us by the messenger. We leave it to thy judgement to test those young persons, whether they are to be trained for that work, that it may enrich thee in honor and us in works. Of if I remark, that something is lacking in them, may it be permitted to return them to you for improvement. Greetings!"

It has been read from this letter, that here at Tegernsee glass painting was discovered, and that the count was to examine the "boys", as to whether they were trained glass painters. But both do not exist therein. According to the text, glass painting was a customary matter, only the Tegernsee Church was previously too poor to produce for itself such glass windows. Wherein the count was to examine the young men remains entirely obscure.

That therefore glass painting was known between the years 800 and 1000 is shown by these proof passages, even though few. Glass paintings themselves of that age have not been preserved. After the year 1000 the proof passages become more abundant; perhaps indeed the windows in the chantry of the Cathedral at Augsburg date from the time about the year 1000. We will speak further of this.

There have also been preserved two books, in which the making of glass, the glass colors and glass painting are described. Both books are unfortunately without dates and one is driven to conjecture. The older of these two books is; - "Heraclius' Book on the Colors and Arts of the Romans." It consists of three parts, of which the two first even originated before the

The second book, "Theophrastus, prince of various sciences," is ascribed to the 12th century. The proof of the character of the author was a German scholar to recall from the word "Theophrastus" (Theophrastus). It is assumed Theophrastus to have been on the Greek about 300, and was entirely false all together. The author of the "Theophrastus" is a German scholar, and is ascribed to the 12th century.

As the earliest existing glass paintings are regarded those in the Cathedral at Augsburg; they are in the southern walls of the Romanesque choir. Since according to all probability this choir window also belongs to the building of about the year 1000, and the window above just as ancient as peculiar, in any case some similar to the latter window, can have been destroyed or removed in the present opinion, that these windows likewise date from the building period between 950 and 1000.

It is particularly struck in 1041; - "The Cathedral of Augsburg and the Fall of itself." Bishop himself, who was seen in a great number of the windows above in 1041, in which the windows are the same; - "The western wall of my mother church was fallen by divine decree."

In the year 1041 there is a window above the choir of the same; - "Theophrastus" (Theophrastus) the name from the church by the aid of the legend "Theophrastus."

At first the figures and the person of glass are very large, is at least not that of the 12th century. It is likewise the same as the window above, and is ascribed to the 12th century.

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year 1000, while the third part appears to have been within the 13th century.

The second book; "Theophilus, priest. List of Various Arts," is ascribed to the 12th century. The proof by the character of the handwriting is however not entirely trustworthy. That the author was a German appears to result from the word "huso" for "hausen" (houses). Ilg⁹⁰ assumes Theophilus to have been a monk Rogerus of the Benedictine Monastery of Helmershausen on the Diemel about 2200, but this entirely lacks all foundation.

90. See *Theophilus Presbyter. Schedula diversarum Artium.* Edited by Ilg. Vienna. 1874.

98. Earliest Glass Paintings.

As the earliest remaining glass paintings are regarded those in the Cathedral at Augsburg; they are in the southern walls of the Romanesque clearstory. Since according to all probability this middle aisle yet belongs to the building of about the year 1000, and the windows appear just as ancient as peculiar, in any case nowise similar to the later windows, men have endeavored to concur in the general opinion, that these windows likewise date from the building period between 994 and 1006.

169 It is particularly stated in 994;⁹¹ - "The Cathedral of Augsburg fell of itself." Bishop Liutolf, who was then in attendance on the empress widow of Otto II, S. Adelheid, received the statement; - "The western wall of thy mother church has fallen by divine decree."

91. See *Monumenta Germaniae historia. Scriptores. Vol. 3. p. 124. In Annales Augustani. Hanover. 1839.*

In the year 995 these Augsburg Annals⁹² state of the same; - "Bishop Liutold built the temple from the ground by the aid of the empress Adelheid."

Note 92. See *Monumenta Germaniae historia. Scriptores. Vol. 3. P. 124. Hanover. 1839.*

At first the figures and the pieces of glass are very large, entirely different from the later custom. Further the clothing is at least not that of the 13th century. It is likewise the same with regard to the age of the letters in the inscriptions. There are still five windows remaining. In each window, which is about 8.20 ft. high and 1.97 ft. wide, stands a single figure, Moses, Jonah, Daniel, Hosea and David. Blue does not pre-

predominate, as in the end of the 12 th century, but red, yellow, green and violet. These windows make less the impression of a transparent wall or of a transparent mosaic, as characteristic of the later windows, but the figures separate from their backgrounds and stand as isolated figures in the clear window openings. Therefore they are not displeasing in effect; but they do not darken the interior. Only thus could the small Romanesque windows have been glazed in colors.

Next to them in age are the remains of the windows at S. Denis near Paris, which have remained from the building of Suger of about 1140. In the Book of Administration, Chapter 34, the monk William writes as follows:-- "Also the grand series of alternations of the new windows, from that first commenced at the eastern end of the church with the tree of Jesse to that over the principal doorway at the entrance of the church, we have had painted above and below by the celebrated artist hands of many masters of different nations."

The windows are excellently designed and are very masterly in drawing as in the colors; they have the effect of transparent mosaic walls, the aim most worthy of endeavor for the appearance of colored windows, which glass painting can propose. They were removed at the time of the "great" revolution, broken in pieces and packed in boxes, which yet retain the magic wand, that again joins together the millions of pieces of glass. But a few things have been preserved, among which are a few panels of grisaille glass.

99. Grisaille Windows.

By grisaille is understood a painting with black lines, the glass painting color on white glass. This white glass is naturally not our transparent window glass. We come later to the making of mediaeval glass. The background for these grisailles is generally produced by a hatching of thin black lines.

Of like age and similar to these windows at S. Denis are those of the Cistercian Monastery of Heiligenkreutz near Vienna, which are now inserted in the cloister and were originally to be found in the clearstory. Heiligenkreutz was founded in 1135 by Leopold the Saint. These windows exhibit only ornamentation in grisaille with quite isolated colored pieces; the Cistercians forbade all representations of figures. Indeed a

to France, without cross bars and ornaments. From 1862 a reproduction the most beautiful designs of these windows from the 13th century.

Note 93. From Witt. der Central-Commission etc.

100. Glass painting of the 13th and 14th centuries.

Perhaps the earliest glass painting remaining in England is

the one of the crucifixion, William of Wyke, about 1180.

In France, from the end of the 12th century are preserved

the most numerous and extensive remains of stained windows.

From the 13th century a great number of magnificent glass

paintings, favored by the unlimited wealth in northern

France. These and others competed in coloring down their an-

cient glass pictures and in executing colored new windows.

The earliest, which were mostly completed in the 13th century

exterior, therefore earliest exterior glass painting from the

13th century. These are found painted windows in France

at Paris, in St. Remi at Rheims, in the Cathedral at Chartres,

and especially in the Cathedral at Amiens, which pre-

sents the most beautiful specimens of the most beautiful specimens

from the 13th century.

The glass painting of the 13th century are then so numerous

ly preserved in France, that even a complete review is impos-

sible here. Almost every one of the early Gothic cathedrals,

many windows and 2. cathedrals still possess fragments of 13th

century glass painting from the 13th century.

On the contrary in Germany, which has possessed neither the

richness of France, nor the number of the 13th century

of French architecture, the glass painting of the 13th century

may be numbered.

In St. Ulrich at Colmar have been preserved in the choir

and windows windows from the beginning of the 13th century.

and windows from the 13th century are preserved in the choir

choir:--the vaults, the nave and the choir. Like nearly all

the windows of the 13th century, the windows of the 13th century

entirely plain, the choir was a Gothic window with wooden

ceilings, that was first painted in the early Gothic period.

This is shown by the architecture, which shows well

170 general chapter decreed in 1134, that the windows should only
 171 be white, without cross bars and paintings. Figs. 262 to 266 93
 172 reproduce the most beautiful designs of these windows from Heiligenkreutz.

Note 93. From Mitt. der Central-commission etc.

100. Glass Painting of the 12 and 13 th Centuries.

Perhaps the earliest glass paintings remaining in England are those in the choir of Canterbury, which indeed date from the time of the architect, William of Sens, thus after 1180.

In France, from the end of the 12 th century are preserved the most numerous and extensive remains of painted windows. Architecture assumed after 1150 a prosperity never beheld since the Roman period, favored by the unlimited wealth in northern France. Bishops and abbots competed in tearing down their ancient little churches and in erecting colossal new structures. The choirs, which were mostly completed in the first zealous efforts, therefore earliest exhibit glass paintings from the 12 th century. Thus are found beautiful examples in Notre Dame at Paris, in S. Remi at Rheims, in the Cathedral at Chartres, but especially in the cathedral at Bourges, which presents quite inexhaustible stores of the most beautiful specimens from the 12 th century.

The glass paintings of the 13 th century are then so generally preserved in France, that even a condensed review is impossible here. Almost every one of the early Gothic cathedrals, abbey churches and S. chapelles still possess treasures of glass painting from the 13 th century.

173 On the contrary in Germany, which then possessed neither the wealth of France, nor was favored by the unequalled development of French architecture, the glass paintings of the 13 th century may be enumerated.

In S. Cunibert at Cologne have been preserved in the choir and transepts windows from the beginning of the 13 th century. The church itself exhibits mainly architectural forms of three kinds:-- the vaults, the nave and the choir. Like nearly all churches of the "transition style" in Cologne and along the entire Rhine, the church was a Romanesque church with wooden ceilings, that was first vaulted in the early Gothic period. This is shown by the appearance, which agrees well with the

documents. The church was dedicated in 1247 or shortly before by archbishop Conrad von Hochstetten. Arnold, bishop of Sengallen, issued the following letter of indulgence:--⁹⁴

Note 94. See Ennen, L. & G. Eckertz. Quellen zur Geschichte der Stadt Köln. Vol. 2. p. 267. Cologne. 1863.

"Arnold, by God's grace bishop of Sengallen to all believers in Christ, who shall see this present letter, eternal salvation in Christ. Since it is the duty of our office to love the glory of the House of the Lord, and to arouse the hearts of believers to works of love, on request of the venerable Lord Archbishop of Cologne, who has dedicated the newly built Church of S. Cunibert at Cologne with our assistance, we have allowed an indulgence of a year and one carnel forever, for which the power was given to us by the Lord, to all those who come here on the day of consecration, in memory thereof, and by permission of the aforesaid Lord, in addition to the indulgence allowed by the Lord Archbishop himself to this church.

Done at Cologne in the year of the Lord 1247 in the month of October."

This dedication in 1247 refers to the completed vaulted church; for later forms, that belong to the 13th century are not exhibited by the church.

101. Production of Painted Windows.

Let us now examine the construction of painted windows. We can place the description, which the monk Theophilus gives "concerning the composition of windows," at the head of the detailed statements; for it chiefly treats of how men designed and prepared such windows in the middle ages, but not as this occurs today. ⁹⁵

Note 95. Theophilus Presbyter. Schedula diversarum artium. Edited by Ilg. Vol. 2. p. 119 et seq. Vienna. 1874.

"Chapter 17. On the Construction of Windows."

When thou wilt construct glass windows, then make for thyself first a flat wooden table of such width and length, that thou canst work thereon upon two parts of each window. Then take thou chalk, and when thou hast scraped it with a knife over the entire board, then sprinkle water over all and rub the whole with a cloth. As soon as it is dried, then take the measure of one part of the window in length and breadth and draw

the same on a table with ruler and dividers by means of lead or tin. And when thou wilt have a border thereon, then draw it in width around, as thou desirest, and of the form that thou wilt. On this draw the figures as thou wilt, first with lead or tin, then with red or black color, while thou makest all lines most carefully, since when thou paintest the glass, thou must apply the shades and lights as on the table. Then work out the various garments, indicate each color in its place, and on everything else, that thou wilt paint, mark colors by one letter. Thereupon take a leaden vessel and cast rubbed chalk and water into the same. Make thyself two or three brushes of hair, especially from the tail of the "marder", of the "grisius", of the unicorn, of the cat, or of the mane of the ass. Then take a piece of glass of any kind, that must be larger in each direction than the place on which it shall be laid, hold it then on the area of that space, and so that thou seest the line on the table through the glass, then draw with the chalk on the glass according to the external outline, but only this. When the glass is too dark, so that thou canst not see the line through it, then take white glass, draw on it, and when it is dry, lay the dark glass over the white, raise it up against the light, and thus pass around it, as thou now seest. In this wise wilt thou draw all kinds of glass, both the faces as well as the clothing, hands, feet, the border, or wherever thou desirest to apply colors.

Chapter 18. On Cutting the Glass.

Thereupon make a cutting iron hot, that is everywhere slender, but thicker at the end. When it glows at the thicker end, hold it on the glass, that thou wilt cut, and the beginning of the break will soon appear.

But if the glass be very hard, then make it wet with saliva, where thou holdest the iron. When it cracks through where thou wilt divide it, then pass further with the iron and the cut proceeds. But after all parts are so cut, take an - - - iron, which is an handbreadth long and is curved at both ends; equalize all parts with this and make them fit, each for its place. After they have been so laid together, take the color, with which thou shouldst paint the glass, which thou preparest in the following manner.

... it is especially in color, and take little bits of green
... one third in color, one third green and one third white.
... being then washed and drained on this stone with wine and
... put them into an iron or brass vessel. Pour the glass with
... all care according to the lines, that are on the table. If
... one will take letters on the glass, then cover those parts en-
... tially with the color and write them with the handle of the

Chapter 30. On the three colors for the lines on the glass.
... one. When these have been the lines on one glass with the
... that the glass may be transparent in the place, where you are
... accustomed to place the lines in the painting. When a line is
... thick in one part and thin in another, and with so much care
... yet thinner, that it looks as if three colors were employed.
... this procedure shall show also the colors for the shadows and
... looked best, and the color must be of the color of the body. The
... thus is the kind of painting produced by the diversity of the

Chapter 31. Of ornament in glass painting.
... on glowing, green, or in white, in white, green, or in
... red, or in blue purple color. When each makes the first
... red on each separated, and they are dry, then go over the top-
... part of the glass with purple color, that is not as thick as
... the second space, and not so transparent as the first, but is
... in the middle between them. After this is dried, take with the
... handle of the brush thin lines on each glass of the three sepa-
... red, when they have dried, so that the lines remain between
... between the colors and between the flowers and leaves.

Chapter 19. Of the Color with which the Glass is painted.

Then take thin beaten copper, burn it in a little iron ladle, until it is entirely in powder, and take little bits of green glass and of Grecian sapphire, which thou shalt grind between two porphyry stones. Then mix these three together, so that one third is powder, one third green and one third sapphire. Grind them together and diligently on this stone with wine and pour them into an iron or leaden vessel. Paint the glass with all care according to the lines, that are on the table. If thou wilt make letters on the glass, then cover those parts entirely with the color and write them with the handle of the brush.

Chapter 20. On the three Colors for the Lights on the Glass.

The shades and the lights of the clothing canst thou likewise make, if thou goest to work carefully, as for painting in colors. When thou hast made the lines on the garments with the aforesaid color, then extend them with the brush in such wise, that the glass may be transparent in the places, where you are accustomed to place the light in the painting. Such a line is thick in one part and thin in another, and with so much care yet thinner, that it looks as if three colors were employed. This procedure shalt thou also continue for the eyebrows and about the eyes, such as nose and chin, on youthful faces, for naked feet, hands and the other naked members of the body. Thus is this kind of painting produced by the diversity of the colors.

Chapter 21. Of Ornament in Glass Painting.

Let there also be anywhere an ornament on the glass, whether on clothing, seats, or in panels, in sapphire, green, or in white, or in light purple color. When thou makest the first shades on such garments, and they are dry, then go over the remainder of the glass with thinner color, that is not as thick as the second shade, and not so transparent as the third, but is in the middle between both. After this is dried, make with the handle of the brush thin lines on both sides of the first shades, which thou hast drawn, so that fine lines remain between these lines and the first shades of that thin color. But furthermore make circles and branches and the flowers and leaves on them, just as thou hast done for the painted letters. But

the surfaces, that were filled with color in the letters, must thou paint on the glass with very delicate twigs. Thou canst also sketch within these circles here and there, little animals, birds and reptiles, or naked figures. In the same manner dost thou make the spaces of the whitest glass. The figures in these spaces thou makest with sapphire, green, purple and red, yet on the spaces with sapphire or green color, which are so painted, and on the red, that is not painted, make the garments of the whitest glass, since there is nothing more beautiful than this kind of garments. By means of the before mentioned three colors, thou paintest on the borders twigs and leaves, flowers and buds in the previously given sequence. The same wilt thou also employ for the faces of the figures, for the hands and feet as well as for the naked members everywhere, where the color named "posk" in the preceding Book is used. Of saffron yellow glass, take not much for garments, only on crowns and on places where gold would be placed in painting. When all this is laid together and painted, the glass must be burned and the colors fixed in the furnace, which thou shalt accomplish in the following manner.

Chapter 22. Of the Furnace in which the glass is burned.

Take flexible rods and stick them like arches in the ground in a corner of the house. These arches have one and one half feet in height, also a like width, but a length of somewhat more than two feet. Thereon rub clay carefully with water and horse-dung, so that three parts may be clay and one part dung. After this has been well done, mix dry hay therewith, then make long cakes and cover therewith the arches of rods inside and outside to the thickness of a fist. In the middle at top leave a round hole, into which thou canst pass thy hand. Make thyself also three iron bars of the thickness of a finger and so long, that they extend through the width of the furnace. Make on both sides three holes for them, in which thou canst place them and remove them, when thou wilt. Then place fire in the furnace and wood, until it is dried.

Chapter 23. How the glass is burned.

Meantime make thyself an iron plate of the internal width of the furnace, less two fingers in length and two fingers in breadth, on which thou shalt strew dry live lime or ashes to

the thickness of a straw stem, and press them with a smooth piece of wood, so that it lies close. This plate must have an iron handle, with which it can be carried, pushed in and drawn out. But lay the painted glass carefully and close together, so that on the outer parts next the handle lies the green and the sapphire and next the inner the white, yellow and purple, which are harder towards the fire. And thus slide the plate on the inserted iron bars. Then take beech wood, that is thoroughly dried in smoke, and kindle a moderate fire in the furnace; afterwards a greater one with all care, until thou seest, that the flames flare upward behind and on both sides between the furnace and the plate, pass over the glass and touching it almost cover the same, so long until it glows moderately. Then shalt thou at once remove the wood, close the furnace door well, and also the hole at top through which the smoke escapes, until it has cooled of itself. The lime and the ashes on the plate serve therefor, that it protects the glass, so that it may not warp on the base iron by the heat. But after thou has taken out the glass, try whether thou canst scratch loose the colors with thy nail; if not, it is well; if thou canst, then place it in again. After all parts have been burned in this way, lay each upon the table in its place; then cast the lead bars from pure lead in the following manner.

Chapter 24. Of the Iron Casting Moulds.

Make thyself two irons, which have the breadth of two fingers and the thickness of one finger and the length of an ell. Then fasten these together at one end in the manner of door hinges, so that they hang together; they will be held together by a nail, so that they can be opened and closed. At the other end, make them somewhat wider and thinner, so that when they are closed, there is a kind of opening within and the sides are close externally. Then fit them together with plane and file, so that when they are closed, thou canst see no light between them. Thereupon take them again apart, make with the ruler two lines along the middle of one part and likewise two lines opposite on the other, a small distance apart from beginning to end. Then cut with the graver, with which candlesticks and other cast articles are wrought, as deep as thou wilt, two grooves in each iron, so that when thou pourest in lead, this

forms one piece. But the hole into which is poured is so arranged, that the one iron is firmly connected with the other, that it may not be displaced in casting.

Chapter 25. On the Casting of the Leads.

Thereupon make thyself a hearth, on which thou meltest the lead. And in the hearth make a hollow, in which thou placest a great earthen pot. Coat the inside and outside with clay, with which is mixed dung, to make it stronger. Over it kindle a great fire. When it is dried, place lead in the pot over the fire, so that in melting it flows into the pot. Meanwhile close the lead irons and place it on the coals, so that it becomes hot. Then must thou have a wooden rod of an ell in length, which is round at the end held in the hand, but smooth on the other end four fingers broad. Then it must be notched at the middle in the width of the iron. In this notch thou placest the hot iron, closest it, and thou holdest it at the upper end so with a bent hand, that its lower end stands on the earth. Then thou takest the small heated iron ladle, dipping the fluid lead and porest it into the iron. The ladle is at once put on the fire, so that it may always be hot, and after thou hast thrown the iron from the wood upon the earth, thou openest it with a knife, throwest out the lead bar, closest it again and placest it back on the wood again. But if the lead cannot flow entirely into the iron, then thou makest the iron hotter and castest again. Thus thou proceedest carefully, until it is finished, since if thou dost proceed with any care, thou canst cast more than forty leads with one fire.

180 Chapter 26. Of wooden Casting Moulds.

If thou hast no such irons, then seek firwood or some other, which may be split true in length, thickness and breadth as above. Then split and cut this round externally. Then make two little marks on the face of each wooden strip, as thou wilt, so that the width of the bar be in the midst (between them). Take a twisted thin linen thread, wet it with red color, and after the wood strips have been taken apart, lay this thread within on the one part from the mark cut at top to the lower mark, so that it be firmly stretched, and when thou layest the other wood strip thereon, press them strongly together, so that when thou takest them apart, the color appears on both parts.

Then take off the thread, moisten it again with color and fix it on the other marks, lay the other piece of wood thereon and press thereon. When the color thus appears on both parts, then cut out for the lead with the knife as wide and deep as thou wilt have it, yet so that the hole does not extend to the end, but with an opening at the top, where the pouring is done. Thereupon bind the wood strips together by winding a thong around them from bottom to top, and holding the wood, pour the lead therein. Then thou loosest the thong and takest out the lead. Then thou bindest and castest so long as until the burning comes to the end of the hole. Then canst thou afterwards easily cast as often and as much as thou wilt. When the leads appear to be sufficient, then thou cuttest a piece of wood, two fingers broad and as thick as the lead is wide inside. Divide this in the middle so that it is whole on one side and on the other is cut in, where the lead is laid in. When this is laid in, trim with the knife on both sides, straighten it, and scrape it off, as it appears (best) to thee.

Chapter 27. On the assembling and setting of the Window.

After all this has occurred, take pure tin and mix therewith the fifth part of lead, and cast in the aforesaid iron or wood as many bars, as thou wilt, with which thou shalt fasten thy work. Also have ready forty nails of the length of one finger, that are thin and round at one end, square at the other end and curved, so that a hole appears in the middle. Thereupon take the painted and burned glass and lay it in the proper arrangement on the other part of the table, where there is no drawing. Then take the head of a figure and enclose it with lead. Lay it in its place carefully and drive three nails around it with the hammer, which is suitable for such a purpose. Join thereto the breast, the arms, and the remaining clothing. And whatever part thou ever fixest, secure it outside by nails, so that it may not be displaced. Then have a fastening iron, that is long and thin, but thick and round at the end. This round end is drawn out to a point, filed and then covered with tin. Then it is placed in the fire. Meanwhile take the tin bars, that thou hast cast, and well wax on both their sides and carry it over the lead on the surface, where it is to be joined. Then take the hot iron, place the tin where two pieces of lead come

together, and stroke with the iron so long until they adhere together. When the figures are thus secured, then arrange in the same manner the spaces for each color, as thou wilt. And thus thou puttest together the window in parts. But when the window is complete and soldered on one side, then thou turnest it over to solder and fasten it everywhere in the same manner.

Chapter 28. On the precious stones, which are placed on the painted glass.

But if on the paintings of windows, on crosses or books, or on ornaments of clothing on the painted glass, thou wilt place precious stones of other colors and without leads, for example hyacinths and emeralds, then thou dost as follows. When thou makest crosses in their places, namely on the representations of saints, or the book, or the ornaments below on the clothes, that are in the painting made of gold or gold paint, then are they made of clear yellow glass in windows. When thou hast painted according to the goldsmith's art, then determine the places where thou wilt add the stones. Take bits of clear sapphire in form of hyacinths, as many as the places require, and emeralds of green glass, and thereupon see that an emerald always stands between two hyacinths. When thou hast well fixed these in their places, draw around them thick color with the brush, but so that nothing runs between two pieces of glass. Then burn them in the furnace with the other parts, and they will so adhere, that they will never fall off."

The making of the painted windows was thus preceded by designing them. This was done on a wooden table in the middle ages, according to Theophilus. A new proof, that in the middle ages just as good designs must be made as today, excepting that paper and lead pencils were lacking. In a remarkable manner, it is not doubted in glass painting as in architecture, that drawings must be made. Probably since painting was accounted "art", building construction on the contrary is a trade matter, which every "master", whether carpenter, stonemason or mason, constructed by means of secret knowledge and art ideas, acting for themselves. These "masters" could not draw, and therefore it must naturally have been possible in the middle ages to erect the buildings without drawings.

18/ When the windows were designed in full size, then the colors

were determined and the colored glass selected. The glass was
 limited in dimensions. Men apparently could not produce glass
 plates. Glasses on the windows were entirely rejected. Only
 small pieces of glass were used. The colored glass was found in
 the outlines of the windows. The colored glass was found in
 leads, which held together the separate pieces of glass. The
 leads were in the middle and relatively small in proportion to
 the present size of the glass. They were finished with the glass,
 the lead and the glass. The lead was finished with the glass and
 more than the lead. Thus the greater thickness of the
 lead was determined in order of the lead and the glass.
 for the more beautiful appearance of the old windows. The di-

10. Colored glass.

The colored glass exhibits, when observed from a distance,
 very different appearances. It is in the form of a plate
 of the thickness of the adjoining colors. Violet-blue is
 the usual color. It has a slight reflection to the eye for the
 immediate vicinity. The color is more or less transparent; however, the
 color is more or less transparent. The color is more or less
 itself and on the contrary being somewhat of color. Yellow
 does not resemble it at all, it is more or less, and one of
 colors. The colors appear a certain distance from a distance.
 It filled with water, its form appears more acute. Blue re-
 cess the transparency of the adjacent black and likewise colors is
 origin, but loses its blue on the whole. Red appears slightly
 the same origin. Red yellow appears almost almost as a
 the same origin. The colors are in the form of a plate
 the window a margin of 0.75 to 1.18 inch, that clearly
 the glass parting from the recess and the small part
 therefore all lines of the outlines or of angles on glass
 as white seen on white and yellow, since they are contained
 produced by the plate and reduced. The irradiation of blue

were determined and the colored glass selected. The glass was limited in dimensions. Men apparently could not produce great plates. Besides on the garments were chiefly required only small pieces of glass of harmonious like coloring. Therefore the outlines of the differently colored parts were formed by leads, which held together the separate pieces of glass. These leads were in the middle ages relatively high in proportion to the present flat leads, they were finished with the plane, while they are now drawn. Since the mediaeval glass was much more uneven than the modern, thus this greater thickness of the leads was necessary. This greater unevenness of the glass and the considerable thickness of the leads are chief reasons for the more beautiful appearance of the old windows. The glass more nearly approximates to semi-precious stones and forms transparent stone plates.

102. Colored Glass.

The colored glass exhibits, when observed from a distance, a very different appearance in regard to the depth of color and of the radiation on the adjoining colors. Viollet-le-Duc in his usual masterly way has called attention to this for the first time.⁹⁷ Blue irradiates most, so that all colors in its immediate vicinity are more or less destroyed; therewith the blue itself loses in strength of coloring. Red irradiates but little and on the contrary gains strength of color. Yellow does not irradiate at all, if it tends to orange, and but little, if it be straw yellow. Fig. 267⁹⁸ illustrates this procedure. The square opening retains its form at a distance. If filled with white, its form becomes more acute. Blue reduces the intensity of the adjacent black and likewise colors it bluish, but loses in blue on the whole. Red injures slightly its sharp outlines. But yellow maintains itself almost as sharply as white. Therefore white and yellow are employed to bring out the main outlines, and particularly to produce around the window a margin of 0.79 to 1.18 inch, that clearly separates the glass painting from the tracery and the mural paintings. Therefore all lines of the outlines or of shades on blue must be wider than on white and yellow, since they are otherwise irradiated by the blue and reduced. The irradiation of blue may be opposed by drawing strong outlines around it as shown

by Fig. 268.⁹⁶ The drawing a is represented at b as influenced by blue, and by red as at c.

96. *From Viollet-le-Duc. Vol. 9. p. 405, 389.*

97. *From Viollet-le-Duc. Vol. 9. p. 373.*

103. Selection of colors.

The choice of the proper colors naturally requires high artistic gifts. Since these are unbroken and strong, then intermediate tones must form the transition. This is generally neglected, since just herein lies the greatest art. Therefore men are of opinion, that mediaeval windows do not look as glaring as the modern, in spite of the strong colors, since the dirt of centuries softens this opposition of colors. Men have thus resorted to the imitation of "this dirt of centuries" by coating with thin enamel colors and burning them in, instead of managing the harmony of colors by the corresponding intermediate colors. The bad results of this substitute of dirt for the artist may be seen everywhere in the modern muddy and unsatisfactory church windows. Viollet-le-Duc writes thereon as follows:--

Note 98. Viollet-le-Duc. Vol. 9. p. 393.

One believes too readily, that the old glass paintings owed their harmony of color to dirt in part, which time has laid on their surfaces, and we have even frequently heard it stated by glass painters, that these glass windows of the 12 th and 14 th centuries would look glaring, if they were new. This opinion may be held, if it refers to certain bad glass windows, as were produced in all ages and especially during the 13 th century; they appear erroneous to us, referring to the glass windows of the 12 th century, that we still possess, unfortunately in far too small number, and to the good glass windows of the 13 th century. If one examines Figs. 3, 5 and 8, it is easily seen, that the painter has entirely avoided a glaring effect by variety and the mode of drawing or hatching, which gives the modeling. While the backgrounds are left clear, and there have been taken for the backgrounds free tones of beautiful coloring and a shining kind, all colors, which are employed in treating the forms and the ornaments, are carefully beset with close modeling or fine details, which give to these colors the corresponding relative value. This delicately sensitive and thus

very intellegible work, for making effective the kind of each color, is then usually replaced by an artificial dirt, which is so applied, that here and there appear the pure colors, and thus one obtains harmony so frequently in the cheapest way. But one must confess, that this procedure is barbaric and permits the assumption, that our glass painters have no clear theory concerning the requirements for the harmony of their glass. It is nearly as if in order to conceal the lack of harmony between those executing a symphony, one were to allow a bass to predominate from beginning to end, a sort of neutral snoring, in order to permit in some rare intervals here and there, the hearing of one or two movements, freed from their monotonous accompaniment. To execute a painting, especially a transparent one, thus one unequalled in splendor, in order to dirty it under the pretext of harmonizing it, is an idea that might come into the head of a connoisseur, who loves the patina of an art object more than the work itself, but never into the minds of artists, who everywhere seek for honest and gealously studied means of representing their designs. Evidently however, already in the 13 th century, men applied on ordinary glass windows thin and cold coatings of color (we have recognized the existence of this artificial patina on disks, which were enclosed in plaster after their manufacture); but there their thin and cold tones, which were probably applied to the completely set windows, are auxiliary expedients for obtaining a general effect and are not dirt, that by good fortune is applied to the glass areas."

But not enough with the artificial dirt; men "protect" these windows further by wire netting! When the sun shines, one sees nothing at all of the faces and more delicate designs on account of the sharply detached netting. If gloomy weather prevails, then the wire veil darkens the dirty glass still more. The few pieces, that are destroyed by the stone-throwing of playful or bad children, do not cost nearly so much as the wire netting. This foresight strongly recalls the former "best rooms," which were carefully shut up, and whose furniture was covered with mull.

185-104. Wealth of Color.

How rich is the mediaeval series of tones for producing the

harmony of strong colors is shown by the examination of a band, that extends around the representation of the tree of Jesse in the Cathedral of Chartres. (Fig. 269 ⁹⁹). L is the blue ground, the leaves thereon are purple, green and yellow; the two pearl bands are yellow; the interior is accompanied by a narrow band, that is also blue like the background L; the spaces at G are red; the interlaced band is painted on white glass; the background A of the middle figure is red; the band B thereon is blue; the spandrels C are green; the ornamented square between them is blue; the leaves thereon are purple; the little angle R is again red.

Note 99. Viollet-le-Duc. Vol. 9. p. 392.

105. Glass Painting.

Let us now examine the method by which this colored glass was painted. The painting was either produced only by lines, somewhat like a wood engraving; - "paint glass with all "cannela"(lines !) according to lines on a tablet," runs the rule of Theophilus in the 29 th Chapter. Or one can proceed "as in painting with colors, if they do so carefully."

As Viollet-le-Duc states, men practised the more careful method in France in the 12 th century. Only for the great pieces of glass in the 13 th century were men satisfied with the simpler lines, which were the order of the day in Germany. V
 187
 188
 Viollet-le-Duc gives excellent heads from the 12 th century, indeed as they are actually painted, and likewise as they appear when seen from below.

Figs. 270 and 271 ¹⁰⁰ are from the grand northern rose window of Notre Dame at Paris of about 1280; Figs. 272 and 273 ¹⁰⁰ are from S. Remi at Rheims, indeed probably from the choir there. The leads entirely disappear by the effect of the light and the broad shadow areas become misty and translucent. It therefore requires great experience, how everything must be exaggerated in design, in order to produce the intended effect afterwards. Viollet-le-Duc illustrates this very instructively by two heads.(Figs. 274 to 276 ¹⁰¹). A head represented with particular care from the 12 th century is given by Viollet-le-Duc in Fig. 277 ¹⁰² ; the hair is here separated by light strokes scraped out with the handle of the brush. Fig. 278 ¹⁰² is from the Cathedral of Bourges and reproduces the head of J

Jacob from Fig. 279 ¹⁰², as his sons bring him the bloody clothing of Joseph; every line and all the exaggerated drawing are intended for effect at a distance. The light passing through it subdues the whole into a properly shaded face, although this face is only represented in lines.

Note 100. Viollet-le-Duc. Vol. 9. p. 419, 421, 422.

Note 101. The same. p. 426.

Note 102. The same. p. 415, 416, 412.

Similar early glass paintings from the beginning of the 13th century and shown in Figs. 280 and 281 ¹⁰³, which represent the flight into Egypt (The ground is blue, the border red and the panels are white; diameter 2.07 ft.). Here likewise belongs Fig. 283 ¹⁰³; also Fig. 282 ¹⁰³, that shows S. Mauritius in armor; they are to be found in the Germanic Museum in Nuremberg and came from the collection of Count Götzendorf-Grabowski at Posen. The same further contains other masterworks of that period. Thus the windows in Figs. 284 to 288 ¹⁰³, which are all from Austria, since their animated borders recall the windows in the choir at Heiligenkreutz near Vienna. (Figs. 289, 290); it is assumed that these windows came from the original choir. In regard to the curved outlines, one is at first inclined to attribute these enclosures, not common in other countries, to the shapes of the stone openings of some transition windows; but the windows in Figs. 291 and 292 ¹⁰³, that are also to be found in the Germanic Museum and date from a somewhat later time (after 1300), illustrate how these animated borders encroach on the white band; the windows were thus set in openings enclosed by straight lines. The windows in the choir at Heiligenkreutz may therefore well have been executed at the time of the dedication of the new choir (1295). These enclosures are a very happy border for figures of every kind; they elevate these materially and contribute quite strongly to the clearness of the representations; they are by far to be preferred and placed before the later favorite enclosures by columnar architecture and canopies. From Heiligenkreutz came also the two surface patterns in Figs. 293 and 294. Here also belongs Fig. 295 ¹⁰³, apparently from Altenburg near Cologne.

Note 103. From Essenwein's drawings.

Beautiful examples of canopy architecture are presented by

Cologne Cathedral; Fig. 296 is from the wall of the northern transept.

How such a colossal window of the developed Gothic cathedral compares as a whole is shown by the adjacent plate; a window from the middle aisle of the Cathedral at Cologne. The clear width between the stone mullions is 3.77 ft.; this is too great a span for a glass area set in leads. One cannot make such areas larger than 10.76 square ft., if one can take them in hand and set them, neglecting the fact, that they resist the wind. The clear width must therefore be subdivided by iron bars; one such division would have sufficed; 1.97 to 2.80 ft. in clear width is a proper size, which is directly taken in the later German buildings for the clear distance between the stone mullions. Men indeed resorted to two bars in the drawing, so that the figure might come in the middle. The horizontal iron bars, the storm bars, that hold the mullions in their places, are about 2.95 ft. apart; then these glass windows are further stiffened by two soldered thin round bars, the wind bars.

In the upper tracery, the storm bars are arranged according to its form.

In the Cologne aisle (see the adjacent plate) only the lower part of the window is occupied by figures and rich canopies; the upper part is made in a kind of grisaille, indeed so that certain bands, interlaced bands and roses are brightly colored; these patterns are distinguished by infinite variety.

In the choir window in Fig. 298 ¹⁰⁸, only the four pointed arches and the circle enclosed by them are blue, the inserted cusps are red; the rest is white, so that only the leads produce the pattern.

Note 104. Probably from the Church of S. Maria am Wasen (near Leoben).

Note 105. From Essenwein's drawing.

Note 106. From Mitt. der central-commission etc.

Note 107. From a drawing by Klein.

Note 108. From Schmitz.

The choir window in Fig. 299 ¹⁰⁸ exhibits in a similar way only the interlacings colored yellow, and the cusps inserted therein are red; the rest of the rich pattern is white. Fig. 300 ¹⁰⁸ is similarly colored, except that the inserted cusps

are blue. A fourth choir window (Fig. 301 ¹⁰⁸) has the great square colored red with yellow stars, and the circles inserted in these squares and in the great triangle are blue, together with their cusps; the middle stars are red and yellow.

Fig. 302 ¹⁰⁸ makes the quatrefoils yellow and the inserted cusps are red, the remainder of the pattern being white; on the contrary, Fig. 303 ¹⁰⁸ is entirely colored.

195 In the Church of the former Cistercian Abbey of Viktring near Klagenfurt have been preserved in the choir beautiful windows of the end of the 14 th century; they are particularly distinguished by the very skilfully designed foliage background of the representations, which exhibit the most varied leaf forms; the surfaces are quite uniformly filled by them. The entry of Christ into Jerusalem, represented in Figs. 304 to 306 ¹⁰⁵ extends over three glass surfaces; yet the separate groups are so skilfully designed within the separate surfaces, that not a single member of the tracery crosses them: One also well sees here, how the middle ages represent Christ and the holy persons of his company in their clothing, that is not mediaeval and is 196 manifestly oriental; on the contrary, the people paying homage to him are represented in the contemporary clothing of the middle ages, which was in fashion at that time. The canopy over the "meeting of Mary with Elisabeth" (Fig. 307 ¹⁰⁵) is of special interest, since it reproduces a wooden structure in high Gothic, such as seldom remains.

Sprung from the same school is the window in S. Erhard in the Breitenau (Fig. 308 ¹⁰⁵); the inscription runs:-- "Albert, Duke of Austria, Styria, Carinthia, etc., and his wife." This is Al- 197 bert-with-the-pigtail, who ruled from 1377 to 1395; his first wife was a daughter of Charles IV, and his second wife was a Hohenzollern, Beatrix, daughter of the Burgrave of Nuremberg.

Of somewhat later origin is the similar window from S. Maria-am-Wasen near Leoben (Fig. 309 ¹⁰⁵). From the same time date the windows from S. Stephen at Vienna (Figs. 310, 311 ¹⁰⁷); they exhibit the further development of the figure representations under canopies. Figs. 312 to 314 ¹⁰⁶ give some favorite details from the windows of this late age; coats of arms from the 15 th century.

We have heretofore seen, that the figure and ornamental rep-

representations remained within the divisions produced by the tracery, but the windows in Fig. 315 ¹⁰⁸ from the Cathedral at Cologne shows the representation - the adoration of the three wise men from the East - extended over both divisions of the window; the middle mullion cuts through the principal group. The tracery gable is indeed so arranged as if the middle mullion did not exist. Thereby is the most erroneous way followed in the design of painted windows; - the architect loses control of the glass painter. The latter only regards his glass paintings; these are to him isolated purposes and not the means to an end; it no longer occurs to him to bring into effect the entire building and to allow the colored windows to play only that part in the entirety, which belongs to them; his representation of figures is to him the chief matter; the place on which it comes has become immaterial to him; on the contrary, he feels himself most unpleasantly restricted by the architectural construction, and he seeks to ignore the existence of this as much as possible, and to suppress it. As the windows in the south side aisle of Cologne Cathedral were made about the middle of the last century, the painters were paid just as little attention to the architecture, i.e. for the subdivision produced by mullions, so that in the same representation of the adoration by the three holy kings, the tips of the feet of the child Jesus, which are kissed by one of the wise men, are separated from the rest of his body in a different division of the glass. This destruction of the architecture must be opposed in the most decided manner; for the observers actually see merely the colossal glass paintings, that kill everything else, but behold nothing of the beauty of design of the tracery, nor the clustered pier between with its graceful capitals. But at that time, artists at least were entrusted with the problems for the House of God; in spite of the then quite defective glass and the lacking study of mediaeval procedures, these windows are true masterpieces, just as charming by the grace and perfection of their drawing as by the excellent choice of their harmonious colors. But how opposed, on the contrary, is the effect of nearly all modern windows with the dingy and inharmonious colors, the misdrawn figures of saints and their stupid faces, which the masters of the prevailing trade sell

to the clergy for heavy money.

Today men make glass indeed, which comes very near to that of the middle ages; but there are two kinds, and the better one is seldom used. The inferior material is the so-called cathedral glass, which is rather opaque and therefore has little brilliancy; yet it is 10 to 20 per cent cheaper than the transparent antique glass, and thus it is preferably employed in sordid competition. If cathedral and antique glass be laid on printed paper, then one cannot read print through the former, but conveniently through the antique glass.

261 106. New Kinds of Glass and New Glass.

With the beginning of the 13 th century occurred a change in glass painting from the discovery of new glasses and of new painting colors. In the 12 th and 13 th centuries, except for red, the glass was self colored. The red itself was melted on greenish white glass of equal thickness; later the red skin was extremely thin. Likewise men did not know of the yellow glass, produced by silver salts; this transparent yellow glass caused an entire change, certainly not for the advantage of the glass painting itself.

Already from the first half of the 13 th century, men had attempted to produce more light in the churches, so that they no longer filled the windows to the tops with colored representations, but only the lower part of the middle area, but filled the remainder with grisaille. We likewise see this on the nave windows of Cologne Cathedral from the 14 th century. Since the luscious coloring appeared in comparison with this light grisaille, men sought lighter tones for the colored representations.

Furthermore, that these periods were friendly to light is proved on one hand by the growth of the windows into these colossal surfaces, between which the supporting piers almost entirely disappeared, colossal glass windows, that are scarcely equalled by the glass surfaces of our modern business buildings; on the other hand, that men tried in every way to make glass painting, which had now declined and which men apparently could not escape from, lighter by the great grisaille areas and lighter tones.

That men regarded the lightness of churches as an advantage,

even in sunny Spain, is also proved by the documents. When the conference of architects at Gerona (1417) was asked, whether the nave of the church should be built with three aisles or but one, then two of them expressly stated as the advantage of the single aisle, that the church would thereby be made lighter.

"Antonius Canet, stonecutter, master, also sculptor of the statue of the city of Barcelona, and master of the works of the see of Urgel, said:-- ¹⁰⁹ "the church would be without comparison much lighter."

Note 109. See Jean Bermudez. Noticias de la Arquitectura y Arquitectura de Espana. Vol. 1. p. 261 et seq. Madrid. 1829.

And the architect of the church, Guillermo Bossy, stated:-- "And if it continued with one aisle, there would be great windows and great light, making it more beautiful and notable."

Thus one would proceed in the proper mediaeval way at Laach and Wechselburg, if the modern window obscurments were removed and light were admitted to the church.

In the 14 th century, glass painters continually approximated nearer to the execution attained only by opaque painting, and which at most is only applied to the painted windows of living rooms. From the painted windows of dwellings may have been developed this art. Church buildings gradually ceased and with these the greater problems of glass painting. On the contrary, the prosperity of the upper classes had so increased, that glass painting found new support in city architecture. The most varied kinds of flashed glass were now made. Thus originated violet by red on pale blue, green by yellow and blue on white. By grinding off one or the other flashings may be produced new and special effects. Men likewise painted with enamel colors on white; thus the glass mosaic ceased. Such a painting is shown by the disk from the Germanic Museum, which represents the charming mediaeval story of the infatuated Aristotle (see the adjacent plate);- the beautiful Phyllis had wagered with Alexander the Great, that she would reduce the famous philosopher to serve as a riding animal; she then actually rode the infatuated wise man in such a condition before the king. This painting already belongs to the Renaissance and dates from the beginning of the 16 th century. About this time appeared a second bloom in glass painting, of which the

windows of the northern side aisle of Cologne Cathedral present splendid examples; yet we here find ourselves outside our period.

Chapter 9. Mural Painting.

a. Painting of Interiors.

107. Painting.

Mediaeval churches were entirely painted in their interiors. With modest means, the vaults and walls were strongly tinted; with greater wealth was added the ornamentation by pictured representations, so that if means permitted, the entire interior, vaults, walls and piers were to be covered with representations, chiefly from the Holy Scriptures or the legends of the saints. Early Christian art, with its interiors entirely furnished with mosaics, evidently became the instructor therein, and the merovingian period had faithfully transmitted this richness of coloring. This is proved by the numerous passages in writings, which describe the splendor of color in the churches in the Frankish empire. Remains have not been preserved; indeed scarcely any buildings of the time before the year 1000 have been saved for us.

108. Church at Schwarzhheindorf.

The 12th century first transmitted its paintings, and these are in such extent, that the art of mural painting clearly appears therefrom. Two of the best preserved and completely painted interiors are the double chapel at Schwarzhheindorf near Bonn and the chapter hall of Brauweiler near Cologne. We shall place them at the head of our discussion. The Church of Schwarzhheindorf was erected by Arnold von Wied, afterwards archbishop of Cologne, and he dedicated it on May 3, 1151. When he died in 1156, he was buried in the lower church. An inscription from that period on the east wall and behind the altar in the lower church states:— 110 (See original text).

110. See *Aus'm Weerth. Wandmalereien des christlichen Mittelalters in den Rheinlanden.* p. 9. Leipzig. 1879.

Arnold had accompanied the emperor Conrad in the crusades as his chancellor, and he was also then twice with him in Constantinople, whence he returned in the spring of 1159; therefore Byzantine recollections might be perceived in the form of the plan of this church. The paintings were plainly completed at his death; for the church was later extended, though still in the Romanesque period, and this portion is no longer painted. Bishop Arnold gave this church to his sister Hadewig, who was

210 abbess of Essen and Gerresheim, and who founded a convent there
 211 after his death; the enlargement of it was undertaken before
 1178. The most prominent impression is that the entire back-
 ground is made in a full blue, so that the pictured represent-
 ations, which are vividly colored yellow, green and red, appear
 as if placed on a blue vault; the enclosing borders are green,
 yellow and red. By this blue as the principal color is produ-
 ced the most dignified impression of a richness of color, that
 can be attained in the painting of the interiors.

Since the vaults were also and principally covered by pictur-
 ed representations, then resulted there the unpleasant discord
 in appearance between the more or less horizontal position of
 the vault surfaces and the upright positions of the figures.
 This problem was solved with difficulty or not at all, and it
 indeed finally brought the architects and painters of the Bar-
 212occo and Rococo periods to treat the ceilings and vaults as
 open spaces, wherein were magically produced architectural
 views and figures by means of masterly prespective treatment.
 But since these perspectives could only be drawn from one point,
 they appear more or less distorted from any other point of view.
 The observer is unpleasantly affected, who desires to examine
 the details carefully. Only those, who accept the effect of
 the whole in lights, colors and shades, without too close an
 examination of the details, can enjoy the effect of the interior.

It is similar for the Romanesque and Gothic representations.
 The bent and horizontal forms appear badly, and it is best not
 to follow these beaten paths. One either employs angels alone,
 or the representations must be placed within small "medallions",
 for which the point of view is fixed, and which otherwise app-
 213ear in the general impression of the interior merely as color-
 ed spaces. On steeply inclined vaults, moreover, the lower
 portions of the compartments provide sufficient vertical surf-
 aces for placing standing figures there.

Fig. 316 ¹¹¹ exhibits in plan the vaults of the lower church;
 it represents the vision of Ezekiel of the third destruction
 of Jerusalem and its restoration. In Figs. 317 and 318 ¹¹¹ are
 214 shown two portraits of emperors from the wall niches there; as
 the inscriptions are destroyed, it cannot be decided, whether
 they are German or Biblical princes. Fig. 319 ¹¹¹ exhibits the

decoration of the apse in the upper church; the enthroned Christ, at his feet being a bishop and a nun, indeed archbishop Arnold and his sister Hadewig. The paintings have brown outlines. A According to Aus'm Weerth, ¹¹² the colors themselves are white, yellow and burnt ochre, bole, veridgris, Indian red, cobalt, ultramarine and lampblack.

Note 111. From Aus'm Weerth.

Note 112. See Aus'm Weerth. p. 15.

109. Chapter Hall at Brauweiler.

With these paintings at Schwarzhheindorf agree those in the chapter hall at Brauweiler in style and coloring; here likewise are the backgrounds deep blue, and the borders are green and red. Figs. 320 and 321 ¹¹¹ illustrate the mode of decoration of the compartments of the vaults; the first exhibits Eideon and Judas Maccabeus, the second Saul's victory over the Ammonites. Figs. 322 and 323 ¹¹¹ give paintings from the side arches; in Fig. 322 is represented the dream of Nebuchadnezzar, in the latter is the Saviour, as he pulls two saints away from the dragons. A definite date of origin of these paintings must be determined.

110. Cathedral at Bamberg.

Romanesque ornamentation is full of all possible reminiscences and is hard to circumscribe. In the upper church at Schwarzhheindorf, a dignified interlaced band, as the lower border of the pictured representations, is pleasing to the eye. In the corresponding place in Brauweiler is a luxuriant row of vertical leaves. The choir of S. George in the Cathedral at Bamberg (Fig. 324 ¹¹²) exhibits an entire selection of this more or less fanciful Romanesque ornamentation (about 1200).

Note 113. From Essenwein's drawing.

111. Representation of Figures.

Let us now consider the design of these paintings on vaults and walls and the mode of their representation.

If one neglects the ugly position of the figure representations on the vaults, then are these paintings executed in the correct manner for the purpose of the internal decoration of interiors. They are not done in the manner of modern paintings, but are merely treated as colored outline drawings with little shading; aerial perspective and backgrounds imitated

from nature are wanting. Such a method of painting is just as appropriate as effective. When seen at night, this authentic procedure materially excels our modern figure representations, which disappear in the general tone of the interior.

First the individual picture produces no separate effect by itself and requires no individual consideration for itself; it merely contributes to the general impression as a colored spot in its location. Yet our modern painting with its half tones, its aerial perspective, its lights and shades, is not calculated to arrange itself, not at all to subordinate itself. But its broken colors cannot make themselves generally noticeable together with the full tones of an interior painting. Therefore if an interior is now to be decorated by paintings, it is the final mistaken result, that the interior was created for the paintings and not as a painted interior. In a word, the painter forces himself into the foreground with a series of more or less indifferent or suggestive paintings; the architect is set aside, and his creation destroyed; for no unified internal effect of the interior is obtained. Even the bodily impression of the interior is ruined by these paintings, since it is torn apart by them and is not united. For a principal effect of the coloring must consist in treating the interior for general effect by the combination of its larger parts. For example, if the vaults are mainly blue, the upper part of the walls are yellowish green and the lower portion red, then will the impression of the interior be so easily seized upon by the eye and so embraced, that an interior without colors in comparison with a colored interior would appear, just as death would against life itself. What a cold stone hall is the Cathedral at Cologne. And yet one must be thankful, that its interior has remained free from modern church painting. Art has entirely vanished from the aisles of the church. The clergy is in the hands of art workers of the most questionable kind; they lack the conception, that art is practised by artists, not by artizans, that art requires a training for decades, and that actually or commonly only a pretended piety neither takes the place of training nor of knowledge, not to speak of both at the same time.

What a different training must the mediaeval clergy have en-

enjoyed, that they entrusted their buildings to the greatest artists, and that they were not wrecked on the reefs of unskilful art workers! And yet the mediaeval clergy had not learned Greek! In any case the modern abandonment of the House of God by art speaks strongly against the general culture in modern education, entirely aside from the other conditions.

112. Cathedral at Euskirchen.

Yet we will follow further the development of internal painting. In the nun's choir of the Cathedral at Euskirchen have been preserved the remains of very beautifully drawn ceiling and wall paintings of the early Gothic age, and which are reproduced in Figs. 325 to 332 ¹¹⁴ after the drawings of Klein. The two vaults are adorned by the earthly and the heavenly paradises (Fig. 325 and 327); on the transverse arch between them is represented Jacob's ladder (Fig. 328); the remaining spandrels are adorned by cherubs in the heavenly Jerusalem (Fig. 326), and in paradise by the prophets referring to the Madonna. The chief figure on the walls is therefore devoted to the enthroned Mother of God with the Child (Fig. 329). On the steps of the throne are represented the lions of Solomon -- the lion of the tribe of Judah --, by their sides being female figures personifying the virtues.

114. From Mitt. der Central-Commission etc.

The spandrels beneath are occupied by two bishops, indeed the givers of the paintings. One is an Otto Electus, who does not wear the bishop's insignia; the other is designated as Dietrichus. The former was chosen in 1214 and soon died. There were two bishops named Dietrich; one labored from 1154 to 1179, and Dietrich II from 1254 to 1279. Against the latter bishop as giver, the lack of all tracery seems to object, even if the painting during the period remained behind in reference to architectural ornaments.

On the opposite wall is represented the deified Christ (Fig. 330). Above is God the Father, prophets at right and left, with apostles seated at their feet. In the four side arches of the longer side are represented the three holy kings (Fig. 331) and the entry of Christ into Jerusalem on Palm Sunday. (Fig. 332). Beneath these paintings extends a proud band of beautiful bust pictures, showing holy bishops and women. The

background of the spandrels in the vaults, like the representations in the side arches and the bust pictures are kept in full blue; everything else is shown in natural coloring with simple outlines.

113. Chapel at Pisweg.

Allied to these paintings are those in the Chapel at Pisweg in the vicinity of Gurk (Fig. 333 ¹¹⁴). Here also is paradise represented on the vault; trees and figures exhibit the same treatment. The fourth compartment is occupied by the enthroned Maria with the Child and two holy princesses, similar to the representation on the wall at Gurk. The Jacob's ladder is here painted on the ribs of the cross vault. The pictures on the walls are only preserved in their upper parts and exhibit the birth and the adoration of the wise men from the East.

114. Church S. Maria Lyskirchen at Cologne etc.

Of the same age are the paintings on the vaults of the middle aisle of S. Maria Lyskirchen in Cologne (Fig. 334). They are adapted to the vaults just as masterfully, as they are beautifully drawn and excellent in colors.

In the choir of S. Severin at Cologne have been preserved the remains of dignified figures in the compartments of the vaults there.

A very prominent centre of ecclesiastical internal painting was at Soest about 1200. In S. Patroclus there, and especially in S. Maria zur Höhe are to be found nobly arranged and splendidly colored representations.

In Saxony at Königsutter, Hildesheim and Goslar, but first of all in the Cathedral at Brunswick, are preserved excellent internal paintings of the time shortly before 1200. The paintings in the choir alone at Königsutter have been preserved and finely restored. In the dome of the apse is enthroned Christ within an almond shaped border, on the right and left being the symbols of the evangelists and the two princes of the apostles; on the cross vault of the longitudinal choir is represented a walled circle with saints standing in its towers. In S. Michael at Hildesheim shines the famous Barbarossa ceiling (indeed of 1186).

In Goslar the two churches Neuwerk and on the Flankenbergl contain very masterly representations. In the semicircular

apse of Church Neuwerk are enthroned in the midst the Madonna and the Child, conceived in an entirely noble manner. Here likewise the blue background again produces a strongly relieved coloring, as at Schwarzrheindorf and Brauweiler. The golden halos and the decorated bands were previously made in plaster relief. At the bottom is arranged a series of portraits of emperors. Between the windows are painted single figures with very characteristic folds. This kind of garments is again found in the clearstory of the Frankenberg church between the windows. There are separate figures of prophets sketched in outline only, with fanciful folds in clothing, which exhibit a quite peculiar conception; but they likewise come from the same hand, that created the similar forms of Church Neuwerk, even if they apparently have nothing in common with the enthroned Mother of God.

The Cathedral at Brunswick has retained its complete painting with the exception of that in the south transept. A grand example! Here also the impression immediately striking the eye is that of the predominating blue. The Cathedral was founded in 1172 or 1173 by Henry the Lion; it burned down in 1195. The existing painted vaults must have been erected afterwards; for otherwise not the cathedral but only the roof would have burned. Therefore these vaults do not fit on the round arches of the crossing. Since the paintings were apparently by one hand, and an inscription on a pier of the nave names the painter, Johann Wale ¹¹⁵, the choir paintings must also only date from this time, thus after 1195, although this may well have been already vaulted before the fire.

Note 115. See the preceding Heft of this "Handbuch." p.74.

In the Convent of Wienhausen near Celle (Fig. 325 ¹¹⁶) has been preserved the paintings of the nun's choir, that indeed chiefly date from the time of the construction (1307-1309), even if they were also improved in the 15th century. Here the representation of figures employed in the vaults are of colossal size. These are treated as medallions, which are distributed in the happiest manner in a network of scrolls, that extends over the compartments of the vaults. Less commendable is the ornamentation of the walls with the same web of scrolls; the walls are thus scarcely or not at all separated

from the vaults. Certainly the upper part of the wall containing the window has received a black background on which the scrolls are applied in green, while the vaults show a reddish-brown ground. Likewise the figure representations on the walls should be restricted to the lower great portrait band; the impression of overloading would be avoided, and the clearness of the general effect would have gained.

Note 116. From Dohme, R. Geschichte der deutschen Baukunst. Vol. 3. Berlin. 1887; from a drawing of Essenwein.

A beautiful and clear arrangement is shown by the ceiling paintings of S. Johann near Bözen (Fig. 336 ¹¹⁷) and S. Martin at Campil near Bözen (Fig. 337 ¹¹⁷). Since these churches are covered by tunnel vaults, this explains the position of the angels and the evangelists. In the treatment of the forms of the border appears Italian influence.

Note 117. From Klein's drawing.

The choir of S. Marein near Seckau in Steiermark (see the adjacent plate) then presents a mode of painting, especially a favorite in the high and late Gothic churches. The strong harmony of the color series of blue, gold, red and green disappeared, in its place appearing the modest series of white, yellow, green and violet. The ground is here white, mostly with spots of pea yellow; the ribs are alternately yellow and violet; the flowers are violet, yellow and green. These splendid flowers are especially a very favorite ornamentation of the late Gothic vaults. As inscribed in the choir, the existing paintings date from 1468.

An entirely similar color harmony is exhibited by the grand net vaults of S. Jacob at Liege. The walls are likewise chiefly in yellowish-white in this color treatment, but on the contrary, the vertical and horizontal mouldings are vividly colored blue and green.

Finally may yet be given the painting of a wooden ceiling of this late age. Fig. 338 shows a rather condensed portion of the ceiling from the Church at Isingen in Württemberg. Each three boards, whose joints are covered by battens, form a larger panel, which is enclosed by wider boards.

115. Mosaics in Italy.

In Italy, which had the mosaics of the Early Christian peri-

period in sight, the art of mosaic passed through a revival. A masterly example is presented by the choir of S. Maria Maggiore in Rome (Fig. 339 ¹¹⁸). At the centre, Christ crowns his mother; troops of angels soar in prayer at either side; then follow two kneeling figures, Pope Nicholas IV and a cardinal Jacob; then on the left are the apostolic princes Peter and Paul with S. Francis of Assisi; on the right being John the Baptist, John the Evangelist and S. Antony of Padua. The remaining surface is covered by a grand scrollwork, which extends entirely in the forms of the most beautiful Roman art. This noble design is by the painter Jacob Torriti, who likewise executed the choir niche of the Lateran Basilica. Both mosaics originated between 1288 and 1293.

Note 118. From Bunsen, C. O. J. Die Basiliken des christlichen Roms. Munich. 1842.

In Italy, the primeval land of mosaic, this experienced a particular development in the 11th, 12th and 13th centuries. The name of a Roman artist family, the Cosmati, is connected with the execution of most of these graceful works. Such mosaic works do not cover the wall surfaces and suppress the architectural forms; on the contrary, they nestle within all architectural details, even in the flutes of the twisted shafts of columns. Equally beautiful and expressive examples from the 13th century are exhibited by the cloister of S. Paolo-without-the-Walls in Rome (Figs. 340 to 342 ¹¹⁹).

Note 119. From Gailhabaud.

With the end of the 13th century, the wall painting of Italy commenced to free itself from the ornamental treatment of figures. These are no longer colored outline and linear drawings, but colored paintings with light and shade, which reproduce the reality. That a great advance thereby occurred in painting is clear. But that the effect of the interiors was injured thereby, indeed that these were no longer interiors gleaming in colors, but interiors with paintings, and that architecture became the servant, painting and sculpture the masters, is proved by the course of Italian mediaeval art.

With the beginning of this independence of painting is the name of Giotto indissolubly connected. Between 1304 and 1306 he painted the frescoes in the Arena Chapel at Padua; in 1384

he was placed at the head of the construction of Florence Cathedral. Between these years he created in succession to Cimabue, his teacher, the frescoes in S. Francesco at Assisi. The traits of the faces, the pose of the figures express the spiritual lives of the men, as striven for by his contemporaries in the art of sculpture.

Likewise the decorative style of painting in the upper church exhibits high skill and is characteristic of the painting of many Italian Gothic churches.

Note 120. From Aus'm Weerth. Die Mosaikfußboden in S. Gertrud zu Köln. Bonn. 1873.

b. Coloring of the Exterior.

116. Origin.

Mediaeval art not only made extensive use of the smiling splendor of colors in the interior; the exterior also did not lack the cheerfulness of coloring. Whether the middle ages was in this the pupil of the Greeks can scarcely be determined, since the intermediate term of Roman art apparently had departed from coloring its buildings. But the Grecian temples shone in their gay splendor of color.

233 Viollet-le-Duc says in the preface to the Magnificent work, "*Les Peintures des Chapelles de Notre Dame de Paris*;"- "Every known architecture has been aided by painting, or (since it is necessary to avoid equivocations) rather by the harmony produced by the assemblage of colors, to give to stone, to plaster, and even to marble a value independent of their form in relief."

This principle would scarcely be contested today, even if there be also many, that cannot accustom themselves to the idea of accepting that the buildings of the middle ages were also painted externally in colors.

In like manner an animated dispute prevailed in the first half of the 19th century, whether the Grecian temple was externally cold or not. This age had the misfortune to regard as Hellenic or as Gothic whatever entirely contradicted the perceptions of that time. The marble of statues had been so completely denuded of color by rain, that men plainly recognized in the colorlessness of both kinds of art works the more refined taste of the Greeks in contrast with the errors of the

middle ages.

117. Portals.

Let us now examine the external coloring of mediaeval buildings. Before all else the portals were adorned by colors, whether they were furnished with columns, rounds and hollows, or whether the entire magnificence of the sculptor's art was lavished on them in foliage and statues; all was painted and gilded.

The richest method was naturally heightened by gilding into extravagant magnificence. Thus we know the "golden gateway" on the Cathedral at Freiberg-in-Hartz Mountains and the "golden doorway" on the Cathedral at Magdeburg. Scarcely more than the name of the former proves that it was so richly painted and gilded; only in the deepest folds of the clothing are still found vestiges of colors. Evil hands have "restored" it, and in modern times have removed the protecting cloister as a good finish, so that it now is mercilessly exposed to all injuries of weather, frost, and of the abundant Freiberg soot with its sulphurous acid, and it will soon be destroyed. For seven centuries has it endured all dangers - it must have originated about 1200 -, in order to finally be brought to the ground by the 19 th century, with its feeling for and knowledge of art.

The Magdeburg golden doorway dates from the middle of the 13 th century for its statues, perhaps even from the first half thereof, and it still most plainly shows the coloring. On its jambs are the wise and the foolish virgins represented. The long shirtslike underclothes were entirely gilded and ornamented by patterns painted thereon; the cloaks are blue, red and green. All this splendor of color has vanished beneath a thick coating of soot and dirt; in recent years the colors began to flake off. It is indeed high time to enclose the porch with glass, since modern coal smoke destroys more, than neglect effected in entire centuries.

118. Painting of Surfaces.

If one cannot determine at these two doorways how far the painting extended, the "doorway of grace" at Bamberg Cathedral visibly shows that only the doorway was painted, but not the adjacent sandstone surface. It in fact appears as if on cut stone churches only the "architecture" was painted, but not the

surfaces. Only on plastered churches was the stucco also evidently painted in colors, as Schäfer has proved, especially on the Strasburg churches. Yet one must assume, that if the joints were as irregular and rude as those executed on the south side of the Freigerb chantry, these surfaces were likewise intended for painting. Moreover, the existing coloring of the statues in the tower hall of Freiberg Minster is certainly not correct. An age that invented and loved the glowing colors of glass windows, of enamels and of interiors, never possibly clothed the statues in those calico prints. Only the highest splendor of color can have been thrown over these innumerable sculptures, that made of the tower hall a casket of ornaments, not a dreary and colorless corner. A particularly hateful color among modern church painters is olive green, with which they uniformly cover the vaults and walls, piers and mouldings, in order to later place the ornaments themselves thereon in green with somewhat more yellow or blue.

On the southern gable and the western facade of Notre Dame at Paris, Viollet-le-Duc found abundant vestiges of former painting and gilding, so that one may make an assured picture of the both grand and fabulous impression, that this masterwork of the earliest Gothic made on its contemporaries. The three colossal doorways were richly gilded and painted, and also the niches for figures with their statues; the gallery of the kings above them was likewise painted and gilded in the richest manner. Above this the painting was restricted to the two great arcades with the windows and the central rose window, which gleamed with gold. The upper part, that lost itself in the air, was left in the color of the stone. Can one conceive a grander piece of magnificence than the Paris western facade, which with the graceful work of the chisel combined the smiling splendor of color? How boldly and securely did these honest "master stonemasons" master their art!

Note 121. See Viollet-le-Duc. Vol. 7. p. 109.

Adorned likewise, the western facades of the Cathedrals of Amiens and Rheims were splendid, and also certainly our German Minsters. Black here played a great part as a color; it bordered mouldings, it filled grounds, outlined ornaments, and sketched faces with bold strokes. Otherwise vivid red, full

green, ochre and white served for the coloring of the exterior. This covering of color caused the generally wonderful preservation of mediaeval sculptures and mouldings.

In Italy, men also occasionally resorted to mosaic for the external façades. This is shown by S. Maria in Trastevere at Rome from the 12 th century and by the western façade of the Cathedral at Orvieto from the 14 th century.

237 Chapter 10. Floors.

119. Mosaic Floors.

In all ages the floors in the churches played a greater part, than one is accustomed to after the impoverishment of the last century. Richer floors of clay tiles require considerable means. If every living room has nothing more splendid than a floor decorated by rugs, then for the interior of a church with rich sculptures, ornamental stonecutter's work, glowing windows, richly gilded and painted walls and furniture, a monochrome and uncolored floor for its entirety is a miserable contrast. 238 A floor decorated with equal richness is entirely indispensable for completing the artistic unity.

Mosaic floors, such as the Renaissance and the Early Christian period laid, were little used outside Italy in the middle ages. In Germany has been preserved a mosaic floor of bits of marble in the crypt of S. Gereon at Cologne, indeed in its western part; the light red is there made of bits of Roman tiles; (Figs. 343 to 345); it is tolerably rude. In Laach exists a very much more beautiful tomb slab of mosaic for the Abbot Gilbert, who died in 1152. Likewise in France were some remains of mosaic floors, among others in S. Nicaise at Rheims. S. Bernard of Clairvaux justly spoke zealously at about the middle of the 12th century against the custom of adorning the floors with representations of angels and saints; he wrote to Abbot Wilhelm as follows:-- (See original text).

Note 122. See Viollet-le-Duc. Vol. 7. p. 109. From S. Patr. Bernard. Clarav. Operum. Vol. 4. p. 39. Cologne. 1641. (Text).

For floors were only employed general and ornamental decorations.

239 As previously stated, mosaic floors continued in use in Italy more abundantly and were more beautiful. Mosaic there made itself at home from the Romanesque period, even on architectural parts, and it ornamented the shafts of columns, even when they were twisted, architraves, friezes and mouldings. The works of the family of the Cosmati are known to the world. Still the mosaic floors are mostly quite rude, and they are satisfied with representations of ornaments and scenes by means of black outlines on a white ground. Among them are to be found floors designed on grand lines. Thus in the Cathedrals at Novara (F 240 (Fig. 346 ¹²⁰) and Aosta (Fig. 347 ¹²⁰); the latter employed

in addition to the black outlines a great number of colors for the garments; the year and its twelve months are represented. Only figure representations are exhibited by the floors in S. Maria Maggiore in Vercelli (Fig. 348¹²⁸).

241 120. Labyrinths.

generally within the mediaeval floor is inlaid a so-called labyrinth in mosaic as well as in slabs. Such a labyrinth was also to be found in S. Michele at Pavia (Fig. 349), made of mosaic. Men assumed that this was passed through by believers with certain prayers and after receiving the sacrament, in order to partake of the advantages of a pilgrimage. Such labyrinths were also found in the floors of the Cathedrals of Rheims and of Amiens; in both the portrait of the architect was surrounded by inscriptions; both are unfortunately destroyed. In the preceding Heft of this "Handbuch" (p. 196) was given these architect's inscriptions from Rheims.

121. Marble Floors.

242
244
245 In Italy, the land of marble, also in the middle ages were employed marble floors, particularly the "opus sectile" of the Romans. S. Anastasia at Verona presents from the 15th century such a completely preserved floor, composed of yellowish white, red and black marble; Fig. 350¹²³ is the pattern of the middle and transverse aisles; the side aisles are treated like Fig. 351¹²³; between the columns are inlaid bands as shown by Figs. 352 to 357¹²³; beneath the crossing is a splendid rosette (Fig. 358¹²³). Simpler marble floors have been preserved in S. Pierino at Pisa (Figs. 359 to 361¹²⁴); yet these are enclosed by beautiful and richly designed bands (Fig. 362¹²⁴).

123. From Mitt. der Central Commission etc.

124. From Essenwein's drawing.

125. From Bunsen.

One of the grandest and most complete, of such floors is possessed by the Lateran Church at Rome (Fig. 363¹²⁵), which may worthily be placed beside that in S. Clemente threr (Fig. 364¹²⁴).

Likewise in Germany have been preserved here and there marble floors from the late mediaeval period. Thus there lies in the choir of S. Gereon at Cologne a black marble floor (Fig. 365¹²⁴); the rosettes are made of white marble. Floors like that repres-

represented in Fig. 366 ¹²⁶ are really the denial of a floor; they are so unquiet, that one scarcely dares to set foot thereon. The floor represented here was formerly on the sacristy of Cologne Cathedral and was constructed of black, white and red marble. On the contrary, Fig. 367 ¹²⁷ from the old Cathedral at Cologne is very intelligently designed.

Note 126. From the drawing by the office of the architect of the cathedral.

Note 127. From Schneider's drawing.

122. Other Floors of Slabs.

On account of the cost of marble, the floors in sandstone regions were laid with sandstone slabs; but men understood how ²⁴⁶ to produce richer ones there also. Thus may be found in the Cathedral at Mentz a beautifully designed rosette constructed in red sandstone (Fig. 368 ¹²⁷).

Such slab floors in France were frequently more richly treated by incised lines; the tough but easily wrought limestone, is native there; the incisions are filled with colored mastic or with lead. The floors of the choir and chapels of the old Cathedral of S. Omer were constructed in this manner (Figs. 369 to 390 ¹²⁸); the background and the inscriptions are brown, the figures are colored red; they chiefly date from the middle of the 13th century. The inscriptions show that the different slabs were donated; thus on one slab is:--

²⁴⁷ "Egidius, son of Fulk of S. Aldegunde gave this slab in honor of S. Audomar."

Note 128. From Annales archaeologiques. 1852. p. 137 etc.

123. Floors of Clay Tiles.

In those countries in which cut stone slabs were hard to procure, and especially in brick regions, the floors were laid with burned clay tiles. These are unglazed or glazed. During the early period these were small and were laid like mosaics. Large tiles were later and were themselves in rich patterns.

In the Abbey Church of S. Denis near Paris have been preserved from the time of Suger (about 1144) clay tile floors, that ²⁴⁸ Viollet-le-Duc again discovered. Very small clay tiles were ²⁴⁹ coated with black, yellow, dark green and red; they exhibit ²⁵⁰ the most different forms; square, lozenge, polygonal or circular; they compose charming mosaics. The floor of the chapel

of S. Mary there (Figs. 391, 392 ¹²⁸) and that of the Chapel of S. Cucuphas (Figs. 393, 394 ¹²⁹) are the most masterly; the black tiles from the Chapel of S. Mary have sides of 3.54 ins., and the greatest diameter of those from S. Cucuphas is 4.72 ins. Simple flasks of glazed clay tiles of the same kind may be found in the Museum of the Great Garden in Dresden, taken from the Monastery of Altenzell (Fig. 396 ¹²⁹); they are black and red; the small rounds are enclosed by white margins. These tiles date from the end of the 12 th century.

Note 129. From Viollet-le-Duc. Vol. 2. p. 261, 262, 264, 269.

While according to Viollet-le-Duc, during the 12 th century greenish black predominates in floors and generally the darker tone, the walls are treated lighter. Green, yellow, red ochre and white are the preferred colors. On the contrary in the 13 th century the floors are made in dark and strong colors; indeed black frequently occupies the principal surfaces there.

124. Decorated Clay Tiles.

With the 12 th century, there was introduced into France a different method of construction. The floors were no longer composed of separate very small clay tiles, which formed the pattern, but men made larger clay tiles, which were themselves decorated by patterns in differently colored clays. Then only the floors of less visited chapels were glazed, while much used floors were merely colored in burned clay and clay tiles usually alternated with sandstone slabs.

The floor of S. Pierre-sur-Dive near Caen (Fig. 398 ¹²⁹) exhibits one of the earliest and most beautiful examples of this mode of construction with glazed tiles; it must have originated about 1200. The design is in yellow on black or in black on yellow, the tiles indeed being of red clay, on which the black earth is laid, into which the design is deeply pressed and filled with light yellow; the glazing is transparent with a golden tone.

Particularly in brick countries in Germany are to be found many tile floors, comparatively well preserved, that are mostly glazed. Thus Lubeck is rich in such remains. In the refectory of the Burg Monastery was a very ornamental floor (Fig. 399 ¹³⁰), that consisted of red and black clay tiles, that were hard burned, fine grained and of excellent colors; the

253 small ones have areas of .bout 10.85 square inches and the larger of 21.70 square inches; the white is formed by white mortar.

Note 130. From *Milde, A. Denkmäler bildender Kunst in Lübeck. Heft 2. Lübeck. 1847.*

254 A simpler floor with a very good effect is to be found in t
255 the Church of S. Catherine at Lübeck; this consists of greenish black and red glazed clay tiles (Figs. 400, 401 130). From the destroyed Cistercian Monastery Church at Hradist near Münchengratz in Bohemia have been preserved remains of floors, glazed clay tiles of simple but very beautiful design; Figs. 402 to 405 131 reproduce them. Those in black here are actually violet, those slightly hatched horizontally are greenish blue, and the darker ones hatched vertically are the red ground.

Note 131. From *Mitt. der Central Commission etc.*

Such clay tiles were also inlaid and then exhibit ornaments, coats of arms and the like.

125. Plaster Coating.

Finally, in the middle ages a layer of plaster was also employed for church floors, and these were ornamented by incised designs, which were filled in colors.

Chapter 11. Ornamentation.

126. Grecian Ornament.

Likewise in the domain of ornament have the middle ages found the most reasonable and natural solution, namely that of nature itself. Here also appears the great contrast between Greece on the one hand and the middle ages with the modern period on the other. There the adherence to the same forms for a thousand years, here new creations without ending. The Greeks likewise had already plundered nature for the ornamentation of their buildings, and before them their instructors, the Egyptians; but the principal ornament remained for the Greeks the so-called "conventionalized" ornament, and they never found themselves outside this path of error.

The artistic activity of the Greeks is the same for their ornament as for their architectural forms, indeed as for the entirety - for the temple. Transmitted and adopted forms, whose source, meaning and origin were unknown to themselves and obscure, they transformed into classic beauty. Whoever recalls the never ending dispute, whether the Grecian temple originated from a wooden or stone construction, whether the mutules were or were not the ancient rafters of the roof, whether the guttae were drops or the ancient wooden pins, why the triglyphs did not have three grooves in accordance with their name, and why the metopes did ^{not} stand between the openings, as their name asserts, but were the openings themselves, etc.; he cannot be in doubt concerning these, that the ancients did not know what the detail forms of their art denoted. Already in the time of Augustus, one finds the same discussion in Vitruvius, the same uncertainty and impossibility of solving the riddle of the significance of Grecian architectural forms. Then the Greeks obtained their ornaments from all possible civilizations, from the Mycenaean, Egyptian, and Chaldean-Babylonian art. By the aid of the acanthus leaf and of a few other leaves and flowers, they brought nearer to nature these ornaments, originally betraying very little of nature; but the hard and unyielding ground form was not discarded by them; this became transformed into "conventionalized" ornament only under their artist hands. Now the conclusion, that one can only create ornament by conventionalizing it is an entire error, the great error, that to-

today restrains all new creation.

Where the Greeks and Romans did not employ forms transmitted to them, on the friezes of their temples, on their cups and vessels, they accepted nature as it was and therewith decorated surfaces and vessels. The leaf and berries of the ivy, the vine and grapes, the hop, the bean, all fruits are to be seen there. Are they conventionalized? Not in the least. We meet with the most charming imitation and observation of nature. It is self-evident that these are not plaster casts of natural plants. The artist's hand shaped them, arranged and extended them at the proper places and adapted them to the material. If one desires to designate this as "conventionalization," then would it be right. But this is the sole justifiable conventionalization of natural forms; this alone has a permanent result. The artistically trained eye and not capricious distortion creates from nature "conventionalized" ornament for a given place.

We shall again find this solely justifiable "conventionalization" in Gothic foliage.

257 The erroneous conception, that one must "conventionalize" impels the architect to draw or model no face without a grimace, no flower without unusual distortion, no leaf or stem without constraint or violence. But neither the Greeks, nor the Romans, nor the Renaissance architects proceeded thus, as soon as they had freed themselves from traditional ornament; but everywhere a justifiable and well founded course of thought leads to that "conventionalization", which we understand or misunderstand today. Before all else, the Gothic architects did not proceed thus.

127. Romanesque Ornament.

The origin of Romanesque ornament is most certainly sought in Italy. We there have today in Ravenna before our eyes the transformation from Roman to Early Christian ornament. This Early Christian ornament from the period of the Goths (between 450 and 550) was transformed under the Lombards into the ornament, which we see after the year 1000 in the Romanesque art of upper Italy. Interlaced work and plaited bands are particularly characteristic. Otherwise appears on Italian Romanesque buildings a truly unpleasing and unintelligent abundance of an-

animals, reproductions of entire myths and stories, that speak of the uncontrolled imagination of the artist. Particular beauty can be attributed to the fewest of these decorations.

Only in the 12 th century occurred in Italy a revival of antique ornament, and therewith were originated examples of more perfect form. Thus the Cathedral at Pisa (about 1150) possesses internally truly beautiful antique capitals, even if they were later "embellished" by plaster, with masterly scrolled bands externally. So do we find in the numerous churches at Lucca the antique capitals beside really old ones tried and changed in various ways, without fixing the year of their origin and thereby being able to answer the enticing question:- Italy or Palestine?

Naturally in only those portions of Germany, that belong to the ancient Roman empire, can one follow the development of antique ornament. S. Peter on the Citadel in Metz, the Minster at Aix-la-Chapelle, the Portico at Lorsch and the miniatures yield information. But in a notable way, ornament on the buildings almost entirely ceases after the year 1000; these are left entirely plain. Thus S. Michael at Hildesheim (dedicated 1022), the Monastery Church at Limburg-on-H. (Begun 1040), S. Maria-im-Capitol at Cologne (dedicated 1049), the crypt at Brauweiler from the same time, etc. Only after the year 1100 does the richest ornament occur everywhere on Romanesque buildings. One is therefore justified in asking for its origin. It appears that this new ornament is not at all connected with the Carolingian. Only the interlacings, so greatly loved by the Lombard art of Italy, already exist in S. Peter at Metz. The wild and repulsive style of ornament on S. Jacob at Regensburg (1200) and on buildings allied thereto, such as the crypt at Freising, on the contrary seem to belong to the Italians, who traveled into adjacent countries as Comacines, as shown in the preceding Heft of this "Handbook." (Art. 170, p. 280).

The earliest decorative art in Saxony, that of the Castle Church at Quedlinburg, of the Liebfrauen Church at Magdeburg, of the Monastery Church at Hamersleben, and of the rebuilding of S. Michael at Hildesheim (after 1186) at first appears quite foreign. Antique rows of palm leaves, mixed with animals and other decorations, that wholly suggest the East, cannot at fi-

first be explained at all; but the antique series of palm leaves are found on Byzantine and indeed contemporary buildings in the East. Hence then likewise the Asiatic animals, the lack of other phenomena appears to indicate Indo-Germanic relations, i. e., a now revealed woodcarver's art of ancient Germanic races brought with them from Asia. But since this only occurred after centuries, this explanation will also appear conceivable. The entirely foreign and peculiar capitals of S. Michael at Hildesheim and of the cloister of the Church at Königsutter (about 1180) on the contrary appear to mock this explanation.

While thus in Saxony in the 12th century, apparently oriental influences were active, there was also found on the upper Rhine a revival of antique ornament. Thus in particular on the Cathedral at Spire (about 1180), or on the so-called Erkenbert building in Frankenthal etc. But this was evidently based on foreign training, thus on French in Spire.

128. Revival of Antique Ornament.

In France prevailed from the time of the Romans an ornamentation of little beauty, that is hard to analyze. Especially in the south and west does it make a desolate and repulsive impression. It first commenced to be beautiful, when in Ile-de-France, as in Burgundy and Provence, antique models were again adopted. But this happened at the same time as the Gothic art separated from the Romanesque, thus about 1140.

The choir and the west facade of S. Denis (1140-1144), the west facade of Chartres (about 1140) and the nave of the Cathedral of Le Mans, ^{and} S. Laumer at Eloy (Fig. 91) present the richest and most beautiful examples in northern France. Where this revival of antique ornament originated is hard to disentangle.

Besides in Burgundy, in Provence and in Ile-de-France, there are to be found in Italy and in the Holy Land, as already stated, centres of the most masterly use of antique ornament; unfortunately their dates of origin cannot be obtained or are not proved with certainty.

The Burgundian buildings appear at most to be contemporary with those in northern France; they must indeed have chiefly employed antique ornament between 1150 and 1200. This occurred in such a spirited way, that it equals a further formal de-

development of the antique forms; the Cathedrals of Langres and of Autun are splendid examples. Thus the revival of antique ornament in the 12 th century does not appear to have originated in Burgundy.

In Provence the best known and most prominent examples of this tendency are the west facades of S. Trophime and of S. Gilles at Arles. Here is not merely again revived the ornament, but the entire canon of antique forms;— pedestal, columns, entablature and gable. But here also it has not yet been determined, whether this Renaissance bloomed earlier, at the same time, or later than that of northern France (about 1140).

Finally, we likewise find in the Holy Land on the Holy Sepulchre this handling of the most beautiful antique ornament, but apparently just as little Roman as in Lucca and Pisa, or in Langres and Autun. It there looks so "Byzantine", that the mouldings of the side facade of the Church of the Holy Sepulchre are even held to be mouldings of the time of Justinian, which the crusaders again employed in their rebuilding in the 12 th century. Yet this is erroneous; these mouldings fit with all their returns so excellently into the subdivisions of the ornaments of their separate members, that they could have only been prepared for this external facade.

129. Treatment of Antique Ornament.

In fact the key of the very mysterious riddle appears to lie in the Holy Land, since it occurs, that after centuries of puerile endeavor to hold fast and to stumble after the antique, or that even after centuries of interruption, that antique ornament is suddenly handled with a mastery and with an entirely unexpected perception at different points of the known world, which is unintelligible to every artist. The artist knows, that the seeing of antique forms is of no use at all, if the training is wanting. Yet the artists of the preceding centuries had antique models before their eyes, just as much as the architects during this brief decade of the 12 th century. Yes, the earlier architects had seen antique ornaments in greater numbers and better preservation; for each century allows innumerable ruins to disappear, if they are unused and not under roof and care. If the mere seeing of art works were of any use, then to every artist of every time, it must be possible

to imitate the ancient. The role of a Niccolo Pisano, that the works on art history allow him to play, and according to which he "devoted" himself again to the antique and also at once mastered it, does not occur in life. To this belong the schools and training. But these are the results of the endeavors of men! Where could this training have occurred? Only in the Holy Land. There was nothing but ancient remains; there were artists, who after a thousand years modeled exactly as their ancestors had learned. We have here emphasized the most obvious characteristics of Grecian art, namely the immutable adherence to the same forms, an adhesion entirely unintelligible to us of western Europe, since it is entirely opposed to our nature.

After the antique practice of art for a thousand years had scarcely changed perceptibly, there abruptly occurred the leap from the antique columnar temple to the interior of S. Sophia! From the painfully cherished and consecrated Corinthian capital to the block capital of the Early Christian column, and from the continuous scrollwork, which wound once to the right and once to the left, to the uniform covering of the pointed acanthus for the surface to be decorated. Every palm leaf, every anthemion directly receives an undeniably new form. But after this leap, Byzantium, which was first Grecian, after such a mighty advance in art just as unchangeably held fast to these forms during a thousand years. The Greeks continued now in "Byzantine", exactly as in the period of classical art. This Grecian-Syrian art everywhere continued to live under Mohammedan rule; this is proved by the reports of the first crusade, according to which the crusaders found Christians existing in great numbers in all cities. These remained for the untrained Arab hands their instructors in all arts and art industries and were the artists and art workers of their new masters. From the ancient people of the Holy Land the crusaders evidently learned their abrupt revival of antique ornament. This explains the entirely non-roman treatment of the forms in question. They see the Grecian in fact and not like the remains, which the Roman rule left everywhere in the East.

260 What stood before the eyes of the crusaders, when they conquered the Holy Land, we still see there today preserved in pa

part, and de Vogue ¹³² at the middle of the last century rediscovered these buildings for the cultured world.

Note 132. Vogue, M. de. La Syrie centrale etc. Paris. 1865-1877.

Let us first hear the crusaders, where they first came, in what regions they made themselves at home, and how they at once occupied themselves with the building up of the cities.¹³³

Note 133. See Matthai Paris monachi Albonensis Angli Historia major. Editore Wats. p. 27. London. 1684.

"After they had finally escaped these dangers, they descended into a very luxuriant plain near Antiochia Minor, which is the capital of Pisióia. From here they again sent some parties to different provinces in order to inform them, and wherever possible, to induce their leaders to surrender. The parties left the camp, passed by Heraclea, a city of Lycaonia, and came to Iconium, the capital of that province, which they found abandoned by all its inhabitants. For when the Turks heard of the arrival of the pilgrims, they had left their cities and castles, since they did not have the courage to offer resistance. From thence they passed near the city of Maratia and entered Cilicia. Cilicia is bounded on the east by Coele-Syria, 26/ on the west by Isauria, on the north by the rocks of the Taurus mountains, on the south by the Cyprian Sea; it also possesses two capitals, Ananarza and Tarsus, the native land of Paul, the teacher of the nations.

This city was placed under his highness Balôwin, brother of Duke Godofrid. Robert, Duke of the Normans, conquered a city named Azena, and gave it to his knight Simeon. Duke Bohemond and Count Reimund conquered another city, which they left to Petrus of the Alps. Thence they advanced toward Oxa, occupied the city, and Petrus of Fussilo took Rufa and conquered most of the castles. A certain Guelfus, a Burgundian by descent, subdued the city of Adama and hospitably received therein Tancred, who marched near. Tancred went thence to Manastra, beat the Turks and subjugated the city. Thence he marched down to Alexandria Minor, took the city and conquered the entire province. Baldwin, brother of Duke Godofrid, to the great misfortune of the army marched with the knights down into the northern regions, and the entire country as far as the Euphrates

fell into his hands. Therefore a rumour of him reached the citizens of Edessa, who dwelt beyond the river, that a mighty prince had come from the people of the West. They invited him and begged him with reverence to become the lord of their city. But Edessa is a prominent city of Mesopotamia, that is otherwise called Rages; to it Tobias the Elder sent his son Tobias to reclaim 10 talents from his relative Cabelus. When Baldwin came there, he was received gloriously and honorably by the lord of the city and the entire people. He marched thence to the city of Samosata. When he had seen that it was as good as impregnable, he paid 10,000 pieces of gold, purchased it from the lord of the city, and thus took it into his own power. Thence he passed over to Sororgia, besieged and took it. After this interruption, there was free and unhindered passage from Edessa to Antioch, for those that desired to go. The larger army meanwhile returned to the city of Marescor (that from great fear the Turks had abandoned), and they found therein only Christians. From thence they sent the Norman Duke Robert with the Count of Flanders to the city of Artasia; when the citizens heard of their coming, they killed all the Turks, who had already long oppressed them, and threw all their heads out of the city. But this city, which was also known by another name as Calquis, is 15,000 (feet ?) distant from Antiochia.

After these acts, the portions of the army scattered throughout the various provinces were recalled."

"After Antiochia had been entrusted to Duke Hosmund (Bohemond), they marched to Syria, to go out of the way of disquiet and hunger, and chiefly on account of the Saracen cities of Marta and Barra and many castles of the country, the Christians there were visited by such a great famine, that they were compelled to feed on the rotting corpses of the Saracens. In the year of the Lord 1099 it happened to the Christians, who bravely continued the war and had taken by force of arms many of their cities and castles, that before a very strongly fortified castle, Archas by name, -- Jerusalem lies distant from it 9 halts -- very many of them found death. Among these, Ancelin de Riboldi was hit on the head by a stone; he died after receiving the wound, when he only repeated thrice these words:-- "God help me." Hereupon by divine advice the army of God advanced into

the interior of Syria and was strengthened anew by the bountiful hand of God. And since citizens and officials of that region sent deputies with many gifts, that they were ready to surrender their cities and camps, they took hostages from them and laid cities and castles under tribute. After many, who had abandoned them in time of affliction, had returned to them near Tyre, they finally passed to Aerlin and besieged it, and since they suffered from the want of provisions and of drinking water, they daily by common agreement walked around the city barefoot and praying." 134

Note 134. See Muratori. Rerum italicarum Scriptores. Milan. 1728. III. p. 353 et seq. in :- Vitae Pontif. Roman. Card. de Aragonia et aliorum.

"In the year of the incarnation of the Lord and while Pope Urban II stood at the head of the Roman church, the people of Pisa set out in 120 ships to free Jerusalem from the hands of the heathens; their commander and leader was Daibert, Archbishop of Pisa, who was later made Patriarch of Jerusalem and remained there.

But on the march they conquered Leucata and Gesalonia, very brave cities, and robbed them, since they had always obstructed the way to Jerusalem. But in this manner the army of Pisa took the very warlike city of Maïda and besieged Laudicia in company with Bohemond and Gibellum likewise with him and with Count Raymond of S. Egidion. Then they separated and came to Jerusalem, which was taken in the year 1100 by the Christians. The Pisans remained there for a time, rebuilt the helpless city and returned to their native land."

Just in the triangle between Antioch, Apamea and Edessa on the Euphrates lie all the villages of northern Syria, whose buildings De Vogue describes to us:- Moudjeleia, Serdjilla, H Hass, Babouda, Roueiha, Dana, Baquoza, Kokanya, Behio, Qualb-Louze, Tourmanin and Kalat Seman. The crusaders had at once made themselves at home in these villages, fortified the cities, built churches and drew countless pilgrims to them. If then Dehio maintains in regard to these villages located in the desert, that at most they once came from scattered crusaders, these assertions cannot be maintained. The architects and sculptors of the crusaders chiefly came from Pisa and

France, and it is self-evident that they utilized the existing architects and art workers of the native population. Thus we see at the Church of the Holy Sepulchre (about 1150) the "Byzantine" ornament again employed in unchanged form, as it had been wrought there for centuries, and thus the western artists brought the newly obtained Grecian forms to their native land. Thus is explained without constraint the occasional appearance of such forms in the West, as well as their rapid disappearance. Whoever had never been in the East had no interest in them. In such wise is it explained, that here and there until the beginning of the 13th century, there always recur Grecian antique and oriental forms, even in Germany, as in the cathedrals of Spires and Magdeburg; these architects were inspired thereto in the East.

130. Appearance of Natural Foliage.

After the middle of the 12th century, natural foliage abruptly commenced in France to supplant all earlier ornament. Then began the most spirited new creation of ornament, that has ever occurred. Is there any more natural idea, than that of decorating with foliage and animals of one's own country? And yet, how far removed has it been for centuries? But it belongs to the entire spiritual freedom of the artist, who is lord of his art, masters it and sees its inner nature. Whoever is merely trained as an imitator of previous races, with the evident assumption, that it is not assigned to us as descendants to equal the Hellenes; whoever recognizes art only as an inconceivable treasure of unintelligible and disconnected forms -- he never at all hits on the conception, that all this might be otherwise, that even the modern period may itself be creative, if it proceeds not with fanciful caprices, but according to reason and corresponding to the purpose, masters the transmitted forms and transforms them or takes new ones from the products of nature.

Let us consider the procedure of the early Gothic architects in the use of natural foliage for ornament. Have they conventionalized in the erroneous sense, that men apply to that word today? No; there is nothing violent and nothing unusual. For example, take the foliage in Fig. 406¹³⁶. The leaves of the maple are arranged on the round boss in natural negligence.

They are not a cast from any bunch of leaves with no relation to the form of the keystone. No, the hand of the artist has arranged them most charmingly about the centre of the round disk. There the treatment of the leaf is not about an axis of symmetry in opposition to nature; its individual lobes are not similar to each other. The characteristic outlines of the leaf are observed by the trained artistic eye; that to a convex side of the lobe is almost always opposed a concave one. In brief, the most loving and artistic observation of nature - But nothing of "conventionalization." Yet it is not thereby stated, that one may only arrange leaves and flowers together, only as nature has done. Men may connect them together as it may please the artistic eye.

Note 136. From Dehio & von Bezold.

Fig. 407 ¹³⁶ reproduces the leaves of the crowsfoot; it is bent along the course of a scroll. Why should men place a ban on the continuous scrolls of the antique, with which the Greeks have produced such great results? Why should not one further employ blossoms and fruits, even if the middle ages rarely modeled them? The Gothic likewise usually arranged leaves in the manner of the Grecian leaf mouldings. The cavettos of the main cornice are decorated by natural leaves (Fig. 408 ¹³⁶, whose tips are lazily recurved or strongly rise under the projecting hollow. The farther Gothic advanced, the more attention was paid to animated and subdivided foliage. The cabbage and thistle forms prevail; the intellectual Frenchmen even resort to rushes (Fig. 409 ¹³⁶). A small salamander is coiled ²⁶⁵ in the midst. -- This need of the late Gothic for animated surfaces must adapt the simpler leaves by swellings in their surfaces (Figs. 410, 411); yet this is scarcely an artistic utilization of nature, but a caricature -- another variety of modern "conventionalization."

131. Execution of Sculptors' Works.

In the execution of these works of sculpture for the revival of mediaeval art, men have made errors causing the worst results. They believed that during the middle ages all sculptures, whether of foliage or the bodies of men or animals, in relief or in the round, were executed in stone or wood after drawings. And they proceeded now likewise. That this opinion was

entirely incorrect lies in the nature of the matter; but there is no documentary evidence for such an inartistic opinion. On the contrary, the few written allusions everywhere speak of models, that were made for this purpose.

And indeed what is required by the nature of this work? Sculptures are representations in space and not on a plane. It is indeed possible for simple forms to determine and represent their shape in space on one plane by the aid of two or three projections. For partially connected bodies like leaves, figures and clothing, representation by three projections already becomes entirely impossible. But to design such compound forms accordingly, to shape each leaf, each fold in the garments, every part of the face, to model and to change it -- always in three projections -- until it pleases, is such an impossible beginning, that certainly those advising it have never attempted it. The artist, who is conscious that the beautiful details and especially the ornamentation by foliage and beautiful forms of men and animals belong to the most essential parts of his art work, that they lend to the building that charm, which the eye ignoring beauty has so entirely missed in the course of the past century, would of himself look about for a different means in order to more readily and practically work out his idea.

Sculpture is a creation in space; consequently the designing of its art works can only occur in space, when such is always possible. In soft wax and in plastic clay, each lobe of a leaf and each fold of the clothing may be untiringly raised and shaped. All undercutting that mocks every pencil, but which nature exhibits and beauty requires, are formed without toil by the artistic hand in the yielding clay, as required by the eye trained in beauty.

But if the architect has only represented leaves and animals in drawings, then remains the translation into space to the artisan; the stone and wood carver is the artisan of that art.

266 The formative artist himself does not stand at the block to c chisel out the sculpture. He is also not competent to do this; time is lacking to him; these are two entirely separated activities. Just as little does the architect construct his design with his own hands. But in the middle ages everything was oth-

otherwise! The architect did not draw; the sculptor did not model; the "monks" set these stones here and there yonder; divine inspiration strengthened their hands; the journeyman stonecutter allowed his imagination to hold the reins; these drove their "chisels", and since the entire people elsewhere labored with the singing of psalms, then rose those magical aisles proudly toward the sky, before which we are dumb with astonishment.

That the middle ages did not leave to the artisan the translation of the drawing into relief, i.e., that men in the middle ages did not make sculptures from drawings is already proved merely by the comparison of these mediaeval works with the modern, that are executed without models and only after drawings. There the boldest arrangement of draperies with the strongest undercutting; here a dry restraint of folds with inartistic and hard surfaces and still uglier edges. Let one examine the masterly drawings of Viollet-le-Duc and compare therewith the desolate manual products, where sculpture, leaf or animal, that is executed after these drawings. One can seize on every new substitute or new piece; already at a distance, the eye feels hurt by the dryness and hardness of these sculptures.

I once asked such a sculptor's assistant, who in a famous stonecutting workshop had worked after the drawings of a great master; "did you then actually work from the drawings?" No, that would not do! We made little models after the drawings! Thus the precipice of bare impossibility had fortunately been evaded behind the back of the master. But by means of what a procedure? They, the artisans, not artists in sculpture, had stammered correctly in little models! And these were not at full size - but "naturally" at a reduced scale. This creation at only a small scale results from the poor times, when something is to be produced without the necessary means. Sculptures, unless placed at a great height or with quite colossal dimensions, must always be modeled at natural size. What will be the effect of forms to be executed at twice or thrice the size, the most skilful artist cannot predict. This would be just the same as if one desired to draw architectural details at half their actual size; the doubled size requires a more

detailed treatment of forms, i.e., greater detail. Thus it is with foliage, also with clothing and faces. To small faces cannot be given all the details, that are necessary and natural to large ones.

Yet the errors are thereby not sufficient to cause the Modern Gothic to lack all beauty in foliage, animals and men, especially to abandon every art in detail. For example, who would make a cast from a statue or leaf on the new portion of Cologne Cathedral and preserve it in a museum? Men do not create as in the middle ages; they do not resort to nature; they do not take as models the green leaf and the modern man, but they go to St. Denis near Paris or to Xanten on the lower Rhine and painfully imitate what they see there. The middle ages never did this. They did not create after casts and patterns, but after ever youthful and always varied nature. Hence the infinite variety of mediaeval foliage; hence the spirited figures; therefore the inexhaustible freshness and grace. In brief, everything in the mediaeval works, that the modern lacks.

Therefore all these rules for the artisan are erroneous, that one leaf must be concave and the other convex, that this mode of lifting areas did not occur in Gothic, and that this is no mediaeval face. On the one hand, the middle ages never thought and acted thus; on the other, so many treasures remain from the middle ages, but which are foreign to the makers of rules, that one may bring ten mediaeval proofs for every "fault" in style." If knowledge of the middle ages be very small among their "enemies", this is mostly on a still weaker basis among their "friends."

In brief, men take nature as they find it; they use it as artists, as the purpose and place requires, and they always work in "good mediaeval style." But this belongs to the artist and not to the artisan! So was it likewise in the middle ages!

268 132. Painted Ornament.

So far we have only drawn the ornament of the sculptor within the scope of our examination; we cannot entirely pass over the painted. Very much less of this is naturally preserved than of the sculptured. But the painted ornament of early Gothic presents particular suggestions for creation, that one

cannot overlook, who himself undertakes new things. The early Gothic likewise has recourse to nature in painted decoration; but it does not seek to represent with light and shade the leaf and the flower, as they are; it chiefly draws natural forms merely in outline, just as we have seen in the forms of mural paintings, where these outlines are filled up with color. In just the same manner were treated the architectural decorations with which it adorned surfaces. The charming representation by Viollet-le-Duc from the Abbey Church at Fontfroide (Fig. 412 ¹³⁷) shows this excellently.

Note 137. From Viollet-le-Duc. Vol. 7. p. 97.

Yet Gothic does not limit itself to nature in producing its painted decorations; it retains from traditional art the continuous scrolls, the plaited bands and similar things. Thus in the Church S. Elizabeth at Marburg, entire spaces between the windows are occupied by vertical woven bands. Weaving with its oriental patterns remains especially a favorite field for ideas in mural painting.

How rich was the alternation of colors, employed in such problems by this period, skilful in and enjoying color, may be learned from an examination of Fig. 413. ¹³⁸.

Note 138. From Viollet-le-Duc. Vol. 7. p. 100.

On the cross arch A from S. Nazaire at Carcassonne the flat b is painted with alternating squares in vermillion red and reddish brown, which are outlined by heavy black lines. The remaining triangles are in yellow ochre. The cove c is brownish red; the twisted band on the round d is alternately black, yellow ochre, and brownish red. White lines separate these colors. The cove d' is brownish red; the quatrefoils of the second flat e are yellow ochre and brownish red, outlined by white lines on a black ground. The cove f is brownish red, the roll g has vermillion squares, outlined by white on a yellow ochre ground. The flat h is similar to that of e, likewise the flat i of the diagonal arch B. The cove K is brownish red; the roll l corresponds to that at d. The cove m has slate gray squares on a yellow ochre ground, with a white line beneath. The pear-shaped round n has vermillion quatrefoils outlined in white on a black ground. By this great diversity of animated colors are brought into the most beautiful harmony.

133. Review.

The history of mediaeval sculpture was just as "dark" until a few years since as the entire remainder of the middle ages. In recent years has occurred a change, particularly since Viollet-le-Duc brought to light French and even German sculptors in his immortal drawings. Yet the most beautiful female figure produced by him comes from the glorious Strasburg Minster. But one can never free himself from "antique influence." The former opinion has vanished, that after the long night of the middle ages and in Italy about 1260, Niccolo Pisano returned to the antique, beauty being only thus reborn, which had turned its back to earth since the ancients. That Niccolo and the ancients were the ancestors of the Italian Renaissance. Many men learned in art have made the proof of this the problem of their lives, like Dobbert. Hans Semper has even created for this Niccolo Etruscan artist ancestors, who in the elevated and isolated mountain valleys of Tuscany preserved a spark of antique art during the great barbarism of the middle ages and transmitted it to Niccolo. In brief, the history of mediaeval sculpture found imaginative data; but the connection of the facts was wanting.

134. Course of Sculpture.

Of the contemporary or preceding course of sculpture in France and Germany, men in general knew nothing. Two things stood in the way of a correct knowledge of these occurrences; on the one hand being the custom of going to Italy alone and of only regarding its art works as worthy of consideration; on the other being the training, that accustomed everyone to most strongly abhor the "dark" middle ages. Yet in reference to the Greeks and Romans all were filled with divine awe for their god-like superiority. The glorious "Renaissance" therefore must be nothing but a revival of the antique, even in sculpture, with this defective knowledge and such a frame of mind.

And yet nothing is more erroneous than this. The sculpture of the early Italian Renaissance is in nowise a revival of the antique, but is the true development from mediaeval art. The antique masterworks, which have assumed sense and spirit in our museums, were all found only about 1500, thus a hundred years

after the beginning of the Renaissance. But all noble masterpieces of Italian sculpture between 1400 and 1500 are good mediaeval; particularly the representation of the surroundings, the living men and the Christian history, that have nothing to do with antique bodies and the circle of ideas of the ancients. They are no imitations of the antique, such as occurred at and after 1500, and as they are continually executed by our own sculptors. One may analyze the creations of the early Italian Renaissance as he will, but there will be found only differences or even contrasts to the antique; only in unimportant things and in particular variations appear antique solutions. The spirit of the antique likewise does not shine from them.

Let one consider the lovely female faces on the majolicas of the Robbias, the square heads of the Strozzi, the "David" of 270 Donatello, and he will understand where the germ for these new creations laid, namely in the inexhaustible fountains of youth of nature, and not in the imitation of the Greeks nor of the otherwise transmitted works of the Romans.

But men not only erred concerning the origin of this Italian 271 sculpture of the early Renaissance; they were also not aware, that in the time of Niccolo Pisano and of this supposed first rising of beauty, that the art of sculpture had already for 75 years produced many magnificent blossoms in our own German fatherland; that the masterworks of the western facade of Strasbourg were contemporary with Niccolo Pisano, against which he cannot be brought up at all; yes, that such creations already existed there 50 years earlier in the "Church" and "Synagogue" on the south transept, as well as in the "Coronation" and in the "Death of Maria."

But who regards the German fatherland as worth traversing for its art treasures? Yet the smiling sky of Italy does not appear blue over Germany's art works; its statues are not executed in magnificent marble; black and spotted is its sandstone. The fame of the Greeks and Romans does not give to native works letters of nobility, before which one is accustomed to bow. One does not know at all who created these works; this strongly affects the estimation of their worth. An art work is generally neither loved nor causes wonder, merely because it is

in itself beautiful; one is only inspired, because it was created by this or that famous man. Yet that these sculptures are beautiful cannot be denied by anyone, and thus the last evasion vanishes, so that by "Renaissance" is not understood the revival of the antique, but only the revival of beauty.

When men saw in mediaeval architecture nothing more than an error in taste and found the Gothic cathedral horrible, views not so far removed from us, since Gottfried Semper represented it in his "Stil" with so much anger toward the execrated Gothic, as well as with conscious victory and obstinacy, that one saw in the Gothic the paragon of all lack of taste; there indeed might one desire to understand by "Renaissance" the renaissance of beauty. But today even this evasion is denied. One must certainly first accustom his eyes to mediaeval creations, before he can judge of their beauties. But this is the same with everything. It is like learning a foreign language. Before it has been learned, one cannot enjoy its beauties. Therefore when one has been accustomed to see only antique faces, antique drapery and antique figures, he at first regards these mediaeval forms as so foreign, even so horrible, that most men can never resign themselves to the enjoyment of their beauty.

135. Outburst of Sculpture.

Then from whence came this outburst of sculpture in Germany during the 13 th century.

As the Gothic sprung from French soil, so did their sculpture. In France may be observed the development of this art almost a century earlier. About 1200 it was transferred to Germany with the architecture, to there occupy itself in the most peculiar and splendid manner. It passed into Italy, but occasionally without developing into particular individuality or excellence. There was it far surpassed by England and especially by Spain.

Only when all other countries had developed sculpture into full certainty did morning begin to dawn in Italy about 1260 for sculpture, a morning whose sun had also risen in France. For Niccolo Pisanò was based on French training, though with an Italian stamp and individuality, as indeed the Germans have also impressed their diversity upon their works.

Thus we now begin with the detailed description of the development of the mediaeval art of sculpture.

a. Sculpture in France.

136. Early Sculptures in North France.

The earliest works with which we meet are those of France, as previously stated. The western facade of the Cathedral of Chartres presents in its three portals luxuriant representations of this art. They must have been executed about the date of 1140. Robert of Torigni writes:- ¹³⁹ (See original text).

Note 139. Chronique de Robert de Torigni. Edit. of Leopold Delisle. Vol. 1. p. 238. Rouen. 1872. Societe de l'histoire de Normandie.

And of Ricner, archdeacon of Chateaudun, who died on Jan. 12, 1150, the necrology states as follows:- ¹⁴⁰

Note 140. Cartulaire de Notre Dame de Chartres. Vol. 3. p. 19. Chartres. 1865.

"For he decorated the entrance of this church by the image of the blessed Maria, properly ornamented with gold."

Three doorways lead between the two western towers into the middle aisle. Their sides are adorned by columns, on whose shafts are wrought statues. These at once appear singular by their unusual length and straightness (Figs. 414, 415); they stand on the shafts of the columns like organ pipes. There the faces have a finish -- certainly not one of antique beauty; but where may one see such in our vicinity? - So that one is doubly surprised at the harmony - like treatment of both bodies. These faces exhibit such ability, that it is entirely impossible for incompetents to have produced these figures. Only fashion or origin can explain such a type of art.

The extreme abundance of sculptures, that adorn these portals, ²⁷³ show that they represent the climax of the ability of a school, and that accordingly they must have had numerous predecessors and still more relatives. The predecessors apparently exist no longer, but relatives are still numerous.

137. Church of Notre Dame at Chalons-sur-Marne.

In Chalons-sur-Marne are to be found on the south portal of the Church of Notre Dame the remains of similarly elongated figures. They were thoroughly mutilated in the time of the revolution, so that not much can now be recognized. For so many heads to fall on the scaffold did not satisfy the revolutionaries at all; they likewise broke away one half from most statues.

138. Churches at S. Denis, Corbeil and Bourges.

In S. Denis near Paris were similar statues on the building of Suger (1140-1144); but these were likewise destroyed at the time of the revolution and only remain to us in illustrations.¹⁴¹ On the Cathedral of Bourges, two similar portals have remained uninjured; the faces do not indeed approximate to those at Chartres; but the pose of these statues here appears to present a better reason for the similarity of the figures to organ pipes. The small column^s, on which they are wrought, stand so far back, that these statues are inserted between the rounds projecting at their sides; hence their side outlines are adapted to these niches. In Chartres the separate rounds are set back further, so that the straight outlines and sides of the statues now appear free. Thus the position of these statues is so explained in their rather straight outlines, and it was further evidently preferred to allow the figure to appear as long and slender as possible by means of the clothing. This was probably esteemed beautiful and distinguished.

Note 141. See Montfaucon, B. de. Les Monuments de la Monarchie française. Vol. 1. Plates 16, 17, 18. Paris. 1729.

139. Western Facade of Cathedral at Chartres.

Let us now consider the entire design at Chartres. In the middle tympanum is represented the enthroned Christ as the teacher of mankind, surrounded by the emblems of the evangelists; beneath him on the lintel are the apostles. Of the hollows in the arch, the innermost is filled with angels, the second and third with ancestors of excellent execution (Fig. 416¹⁴²). In the tympanum on the right (as seen by the observer) is represented the infancy of Christ; above being Maria with the Child; on the lower lintel is the annunciation, the meeting, the birth and the adoration by the shepherds; above being the bringing to the temple. In the left tympanum is shown the ascension of the Christ; below are the heavenly hosts and at the bottom are the apostles. The hollows of the arches are filled by representations of the months and of the series of animals.

Note 142. From Marcou, P. F. Album der Musée de Sculpture Comparée (Palais de Trocadero) Paris. No date.

If the tympanums are easily and certainly determined, this less successful for the statues on the jambs. Men have desired

to see in them the ancient Merovingian kings and founders. But indeed erroneously already, since they are represented with the halos of saints. One on the left side of the middle doorway wears on his head a melon-shaped cap; this is the badge of Jewish prophets and high priests. The evidence for this may be found on the western facade of S. Dannino near Paenza in Italy.

Such a melon-shaped cap appears on the outer statue on the right hand jamb at Bourges. Likewise here in the tympanum is represented the teaching Christ with the emblems of the four evangelists at the sides and the apostles on the lintel beneath, just as in Chartres. The statues on the jambs must therefore have a like signification. In any case, the founders are excluded, since scarcely one of those with this melon-shaped cap could exist at the same time in both Chartres and Bourges. One will have to seek in these figures the predecessors of the Christ in teaching and his physical ancestors -- the Old Testament as a preparation for the New Covenant. Among the kings and queens are to be seen Solomon, David, the Queen of Sheba, and the like.

140. Cathedral at Angers etc.

Likewise at Angers is to be found on the Cathedral of S. Maurice a similarly designed portal, in whose tympanum is also enthroned Christ with the emblems of the evangelists, surrounded by angels and ancestors in the hollows. Here also stands on the right side (as seen by the observer) at the outside a saint with a melon-shaped cap (Fig. 417).

This portal at the Cathedral of Angers exhibits numerous well set figures and the angels are real gems of sculpture. Certainly they were indeed restored in great part, when the tasteless Barocco style was introduced.

As we have thus found on the middle portal of Chartres a series of representations, that are grouped around Christ as the teacher of the world, and as again occurs about the middle of the 12 th century on the most different churches of France with almost exactly similar treatment, then the right side portal of the western facade of Chartres Cathedral presents in the enthroned Virgin, who holds the Child Jesus on her breast, a second object, commonly repeated on the portals of that age.

The similarly situated portal of the western facade of Notre Dame in Paris -- the portal of S. Anne -- exhibits the same representation (Fig. 418). It indeed is so similar to the Chartres portal, that one might refer it indeed to the same artist. It is assumed that this tympanum is that, erected in 1142 for the older Notre Dame at the cost of Archdeacon Etienne de Carlonde, shortly before it was torn down, and it was then utilized again in the rebuilding. Otherwise the statues at the sides of this portal of S. Anne show how the elongated saints of Chartres were gradually transformed. Certainly here in Paris nearly all ancient statues have been replaced by imitations, and their heads were lost; for except two or three, they seem quite modern.

141. Sculpture in South France.

Besides this first school of sculptors at Chartres, Bourges, Paris, Corbeil, S. Denis and Chalons-sur-Marne, southern France presents a second school, that wrought at about the same time or about 1150. S. Trophime and S. Gilles at Arles are the chief representatives. The statues on the small columns of the jambs were replaced by relief figures between the columns.

In the tympanum of S. Trophime is also represented Christ as teacher, surrounded by the emblems of the evangelists. Hosts of angels are again wrought on the soffit of the arch. The apostles are also not wanting on the lintel, that here in the Italian manner only extends above the jambs. On the left hand are represented the blessed passing into Abraham's bosom, on the other side being the damned.

At the stoning of Stephen on the right jamb of the doorway (Fig. 419), the two stone-throwing Jews again wear the melon caps, a proof that the correct explanation of this article of clothing was given, and which one could not previously indicate. On the corresponding place on the other side is placed the second protecting saint, S. Trophimus.

The sculptures of the three portals at S. Gilles are greatly injured; yet on closer examination they make a much greater impression, than is apparent at the first glance. The representations on the lintels far surpass similar ones. It is very wonderful in what luxuriant antique ornament this architect has rioted. The date of origin cannot be fixed; yet it is lim-

limited by the fact that the church was restored in 1116. An inscription states the following:--¹⁴³

Note 143. Quicherat, J. Melanges d'archaeologie. By Lasteyrie. p. 178. Paris. 1886.

"In the year of the Lord 1116, Brother Egidius began to build this temple in the month of April,on the octave of Lent."

In the Museum at Toulouse are to be found a series of sculptures representing apostles, that attract attention, since two of them bear the name of the artist. On the plinth of S. Thomas is:- "Gilabert made me;" on that of S. Andreas is:- "Uncertain that Gilabert concealed me." These are even of interest for Germany, since the apostles are here partly arranged in pairs and dispute with each other. We find the same design represented on the screen of the choir of S. George at Bamberg, certainly with more spirit.

142. Portals at Moissac and Vezelay.

An intermediate position between these two schools of northern and southern France is occupied by the portals of Moissac and Vezelay. Moissac lies in southwest France in the department of Tarn and Garonne, and Vezelay is in Burgundy; yet they are very similar to each other.

In the great tympanums of both is enthroned Christ, indeed in size predominating over all else; in both the hollows are not filled with sculptures, nor the jambs with their small columns, and on both portals the ornaments are neither antique nor in the usual French Romanesque treatment of forms. Entirely new and unusual decorations appear, that apparently represent flowers, leaves and fruits from nature.

In Moissac, Christ is surrounded by the emblems of the four evangelists and two colossal angels; at the sides and below are represented the 24 elders of Revelations (Fig. 420 ¹⁴²). Quite grand is the ornamentation of the lintel by sunken rosettes; at each end is carved an animal, which appears quite Indian. This architect is a great artist; even the wild beasts on the middle pilaster are grandly arranged, exhibiting a particular power of treatment. The rosettes with flower bands behind them form the greatest interest to decorators; also the freely applied fret band on the tympanum.

This portal is earlier than its relatives in the south and

north. In the cloister at Moissac, the piers are adorned by flatly treated representations of the eleven apostles and of Abbot Durand, who according to an inscription dedicated the church in 1063. The surface of such a pier also bears the following inscription:--¹⁴⁴

Note 144. See Revue de l'Art chretien. 1899. p. 28.

"In the year of the incarnation of the Eternal Prince 1100 was built this cloister, Ansquetil being abbot at that time. Amen."

Thus in 1100 the sculptures of this cloister likewise originated. These are entirely similar to the tympanum of the porch; thus this also dates from the time about 1100.

If the passage of the document mentioned in Art. 136 be correctly referred to 1145 for the date of origin of the western portals of Chartres Cathedral, then these are later than the sculptures at Moissac. This is confirmed by the figures themselves. The creations at Moissac are not isolated there; at Souillac (Lot) may be found a similar tympanum. Likewise Cahors, Carennac and Autun belong here. Beneath the figure of Christ at Autun appears:-- "Gislebert made this" --. Finally Vezelay also.

In the tympanum of the portal of S. Madeleine at Vezelay is likewise represented Christ enthroned within the Mandorla, as the Italians say -- in an almond shaped border; beside him sit the apostles, upon whom rays fall from his hands. These figures directly recall those at Moissac. Similar figures are represented on the imposts and the middle pilaster. In any case this tympanum exhibits high decorative skill, which is so entirely lacking to later creations with all their advance in the treatment of figures. This doorway must also belong to the beginning of the 12th century. Thus far northward reaches the influence of the school of southern France.

277 143. Second Series of Sculptures before and after 1200.

But while the school of northern France was further developed and matured into classical perfection, the school of southern France died, to become supplanted directly by the Gothic sculpture of northern France. The war with the Albigenses evidently cut the thread of its life, and when the country began to recover again from the devastations of the war, the new north-

northern French rulers introduced their own art. Let us therefore consider further this art of the developing Gothic.

The second series of sculptures, which strikes the eye by their similarity, is that which originated during the decades shortly before and after 1200. Paris, Rheims and Chartres again are the chief localities of this art, or more correctly stated, have there preserved sculptures from that time.

144. Church of Notre Dame at Paris.

Notre Dame at Paris was begun in 1164, and at the death of Philip Augustus (1223), its western facade was completed to the rose window. Thus the portals were finished about 1220; for the statues are wrought on the small columns, and the tympanums, like the hollows of the arches, could not well have been constructed afterwards. The southern portal, that of S. Anne, is the oldest. We have already spoken of the tympanum on page 276. How much of the other sculptures are also old, it is hard to state. In any case all the heads no longer remained; only the bodies were imitated. On account of his thorough restoration, Viollet-le-Duc was strongly attacked. Yet how repulsive and neglected doorways with broken sculptures appear may now be seen on Notre Dame at Chalons-sur-Marne and on the western facade of the Cathedral at Bourges; the ancient condition is preserved there. Can one deduce therefrom any advantage for the history of art? Not at all. One knows neither at Chalons nor at Bourges where to begin with these unintelligible stumps and fragments. Does the beauty gain anything from these stumpy remains? These portals look neglected and defaced like a slut's corners. Were the remains preserved in a museum and the portals adorned by new sculptures, then would the proper disposition be found. Viollet-le-Duc did this; but in a museum is no place for mediaeval ruins.

The middle portal is dedicated to Christ as the judge of the world. Here a new series of ideas are personified, with which we now commonly meet instead of the enthroned Christ, as teacher of the world. Thus since Jesus ascended to heaven after his resurrection, so will he return at the end of the day as the judge of the world. He is therefore represented with the upper part of the body naked, showing the wound, with two angels at his sides supporting the instruments of martyrdom, be-

beside them Maria and John on their knees, seeking mercy from the judge. Beneath is represented the archangel Michael with the balance for souls, on his right being the followers of the law with crowns on their heads, on the left the damned, who are dragged away by devils with a chain. At the bottom is shown the resurrection from the grave at this last day. Angels blow trumpets at the right and left.

Only the two upper representations are ancient; the resurrection from the grave exhibits new faces. Likewise the statues at the jambs all have new heads. Only the head of Christ on the middle pier may have been imitated from an old model. This is to be lamented; Viollet-le-Duc is not alone to blame for this; but rather the heroes of the revolution or weathering. In the small reliefs on the plinth as well as in the hollows of the arches are still found most of the old pieces.

The whole shows very well how far sculpture had advanced shortly after 1200.

261
282 The left doorway (as seen by the observer) is dedicated to the Mother of God, and it is indeed the latest of the entire western facade. The statues are entirely free from the organ-pipe appearance and have become real monumental creations. We have therefore reached the third classically beautiful series of French sculptures.

145. Cathedral at Chartres.

Therefore let us first examine the similar works of the second school on the transepts of the Cathedral at Chartres. Just as grandly and completely as the first series does the second occur there. Two great porches adorn the transepts and each affords protection to three portals richly adorned by sculptures. The north transept evidently contains the earlier creations. One here finds the thin "shirts," that we again meet with in Germany. But the most interesting and beautiful statues stand at the south transept; they are striking on account of the unusually refined treatment of the clothing; the fabrics are to be plainly recognized. The outlines indeed still have little animation; but this lies in the problem itself. To desire to decorate the portal jambs with a series of statues means to avoid lively movement of the subordinate masses.

The first series of statues appears on the left (of the obs-

observer) side portal of the south transept. The knight and the two young deacons, who stand beside the bishop, are real masterpieces (Fig. 421 ¹⁴⁵). According to Bulteau ¹⁴⁶, the knight is S. Theodore of Heraclea, military tribune under Licinius. We can observe on him the complete armor of a knight of the time of S. Lois (about 1220); he wears the chain mail shirt (haubert), whose head covering is laid down on the shoulders, over it being a sleeveless coat with a coat of arms (hoqueton). The great pointed shield with the rounded upper angles is especially characteristic of the first half of the 13th century. The deacon standing beside him is S. Stephen; then follow S. Clement, the third successor of S. Peter, and last S. Laurence. Both Stephen and Laurence are deacons and afford excellent evidence for the costumes of such at the beginning of the 13th century; the form of the tiara of S. Clement is likewise worthy of consideration.

Note 145. From Baudot, A. de. La Sculpture Francaise au moyen age et a la Renaissance. Paris. 1884.

Note 146. Bulteau. Monographie de la Cathedrale de Chartres. p. 320 et seq. Chartres. 1887.

At the right side stand holy bishops and popes, who are quite alive, but do not equal the beautiful creations of the left p portal. On the contrary, the rich embroideries of the garments are amazing, and they are reproduced with great skill with the chisel; the artist has luxuriated in the representation in relief of his drawings. In the tympanum of the middle portal is represented Christ as the judge of the world.

146. Cathedral at Amiens.

Yet we must be brief on account of the vast abundance of French creations. The Cathedral of Amiens was commenced about the same time (about 1220). The lower portion of the entire building was evidently taken in hand at once, and thus the sculptures of the three portals of the western facade for the greater part are similar to those of the Chartres transepts; therefore they originated between 1220 and 1240.

282
284 Three colossal portals again adorn the west side. The middle portal is dedicated to Christ, teacher of the people and judge of the world. In the middle stands Christ, teaching with the right hand raised and the gospel in the left. Above in the

tympanum is the last judgement; angels with trumpets arouse the dead from their graves; in the middle is the archangel Michael with the balances for souls. In the series above is found the separation of the blessed and the damned, and high above in the apex is enthroned the inexorable judge of the world, half naked as he rose to heaven; he exhibits the wounds. Maria and J John kneel in supplication for the world on the right and left, behind them behind the angels with the implements of martyrdom. Above appears God the Father. The innermost hollows are again filled with angels, the outer ones having apparently the elders of Revelations and similar persons. On the jambs are represented the apostles in great statues; these and the statue of the Christ on the middle pier form the climax of the middle portal. The figure of Christ is the preparation for the most masterly representation ever created, namely for the "beautiful God" on the north transept at Rheims. How weak is the modern period in contrast to the great masters of the middle ages is shown by a comparison with Thorwaldsen's Christ. On the plinth below the apostles are represented the manly virtues and occupations, the months and seasons of the year, entirely little masterworks of the most graceful work in medium relief.

The portal on the right of the observer is dedicated to Maria, who stands at the middle pier, crowned and with the divine Child on her arm, a truly royal figure. On the right jamb are represented the annunciation, the meeting, and the presentation in the temple, that are happy continuations of the corresponding sculptures on the north portal at Chartres; opposite indeed are the royal ancestors from the house of David. On the lintel are seated Moses and the prophets, who with their great wide beards vividly recall the similar sculptures of the Paris portal of S. Anne; one beholds everywhere a fixed series of ideas and definite types of the different persons from the Holy Scriptures or the lives of the saints. In this evidently existed the abilities of the sculptors; they were trained therein. Already by this generally and uniformly employed canon of ideas and persons, one sees how erroneous it was to desire to attribute always the merit of these designs to the clergy there in charge. It was certainly difficult to assume such a series of ideas for the honest tradesmen of the art histories, the "fra-

"frankly" creating stonecutter; but since the primitive era, painters and sculptors, with the eye of the artist and his creative power, have taken from the stories of Holy Scripture the representable series of ideas, and they have created the persons concerned from the biblical description; therefore even to the smallest ornamentation of the plinth, all "symbols" are intelligible and related. Examine the vine at the feet of the Saviour in the middle portal. "I am the vine; ye are the branches," is spoken to the observer. Furthermore on the tympanum of the portal of S. Maria are represented the death of Maria and her coronation by her divine Son.

147. Third Series of Sculptures after 1250.

Then on the southern transept appears the third school of early French sculpture, the most graceful and perfected of French mediaeval art; it falls in the second half of the 13th century. The jambs are still adorned by charming statues, while the figures of the Madonna with the Child on the middle pier, the apostles on the lintel above and the hundred small figures of the tympanum, and particularly those of the hollows have an animated charm and perfection, that are unequalled; an entire museum might be filled with them, if they were single and separated, exhibited for quiet enjoyment. How the training suggests the fixed representations is also shown by this portal in its highest development. Here also the apostles are disputing in pairs or in mutual instruction; they are entirely masterful figures and invite all to the most zealous study, who have such to create. There prevails joy, beauty and spirit, but not the artisan's restraint, which undertakes to represent piety by dull looks and hanging faces.

Likewise Maria with the Child on the middle pier is a dignified embodiment of that virgin, who was chosen to bring forth the Son of God and proclaims:- "See now that henceforth all peoples will call me blessed," while the anxious, languid and invalid figures, that "adorn" the churches as "madonnas", make Christian traditions contemptible.

148. Cathedral at Rheims.

We now come to that Cathedral, that exhibits the most perfected sculptures, which even contest the palms with Grecian creations, namely to that of Rheims. They almost exclusively

belong to the third school, that produced from about 1250 until the end of the century. Of the first series, nothing at all remains in Rheims. Only in the neighboring S. Yved at Braisne are preserved the remains of a coronation of Maria, that exactly corresponds to the Chartres organ-pipe figures of the west facade, but they are more graceful in pose, since the figures in Braisne are seated and not standing. Therefore the garments are so much more natural and conceivable, so that one sees that the Chartres models reproduce the prevailing preference for very close-fitting garments with the utmost possible slenderness of the figures. Maria is so skilfully modeled, that one is not only reconciled to this fashion, but finds it beautiful and distinguished. Otherwise there are faces similar to those at Chartres and the same ornamental carving of the limestone in patterns and folds.

The second series is represented by two portals on the Cathedral, one on the west facade and one on the north transept. Everything else belongs to the third, the school greatly predominating over others.

For the grandest masterworks of the Cathedral at Rheims, even the artists may be determined. In the preceding Heft of this "Handbook" (Art. 136, p. 196), we gave the architect's inscription, that was only to be found in the labyrinth of the floor of the cathedral. According to that, Jean le Loup worked 16 years on the portals, which he also commenced; Gaucher of Rheims continued the portals and executed the hollows of the arches, while Bernard of Soissons constructed the rose window and five vaults. 147

Note 147. See Demaison's Essay on this matter in Bulletin archæologique. 1894. p. 3 et seq.

Accordingly the two principal artists of the masterly sculptures on the west facade were Jean le Loup and Gaucher of Rheims. Thereby is confirmed the opinion already repeatedly expressed by the author, that in the middle ages the architects were at the same time sculptors; the art of sculpture formed a part of their training. The architect Lorenzo Maitani at Orvieto (from 1310 onward) was permitted to take pupils at the cost of the building, "for designing figures and preparing stones," and likewise in Germany men served a "master in art to

be trained in stonework, foliage or statuary." The cathedral architect at Prague, Peter Parler (1356-1378), like the one at Regensburg, Conrad Rorocz (1459), each received a special payment for sculptures in addition to their contract salary. Why would these Rheims architects be said to have wrought for 16 and 8 years on the portals, and particularly on the hollows, if others had created the sculptures thereon! Therefore there also stands on the lintel of the portal of Santiago at Compostella adorned with the richest sculptures:--

"In the year 1188 from the incarnation of the Lord, the 226th from the era; the calends of April; the lintel of the principal portal was set, of the Church of S. James. By master Mattheus, who as master erected this portal from its foundations."

That this Matthaëus was the architect is incontestably proved by the documents quoted (see the preceding Heft of this "Handbook," Art. 168, p. 225). Therefore likewise at Gerona, for the question whether a colossal vault of 72 ft. span should be turned over the cathedral, and whether the buttresses commenced were deep enough, a sculptor is mentioned among the architects, at least he calls himself such:--

"Antonius Canet, stonecutter or sculptor of the statue of the city of Barcelona."

There may also be read on the choir enclosure of Notre Dame at Paris, which is adorned externally by sculptures, the inscription, which is indeed no longer the original:--

"It was master Jehan Ravy, mason of Notre Dame for the space of 26 years, who commenced these new histories, and his nephew Jehan le Bouteiller, who completed them in the year 1351."

And in Italy we frequently find evidence that the architects were the sculptors.

Let us now consider the sculptors themselves of Rheims Cathedral. There is first the portal of the west facade on the right of the observer; it appears to contain the oldest sculptures of the cathedral. These are indeed characteristic of the second series and may have been commenced just after the laying of the corner stone in 1211. The precursors of Christ in the Old Testament are represented; Abel, Abraham, Moses, & down to S. Simeon with the Child Jesus in the temple. This is

directly succeeded by the doorway of the northern transept, on the jambs of which stand unusually large and subordinate figures, that are not satisfying; on the contrary, the Pope S. Pius VI on the middle pier and the representations on the tympanum are more successful. But the seated figures in the hollows are perfect masterworks; each deserves to be cast and exhibited in the museums. Were they in Italy, this would have been done long since.

287 The adjacent doorway on the north transept then contains the greatest treasure among the masterpieces in which Rheims Cathedral is so rich, "the beautiful God" as the Rheims people say. The portal exhibits different hands. At the jambs stand yet statues of the second series of sculpture, which are very well modeled, yet without that grace, that forms such a striking characteristic of the creations about and after 1250. Their garments are crumpled in many little folds, an otherwise rare mode of treatment, that we shall find again on two statues of the west facade, Maria and Elisabeth. This gracefulness is exhibited in the highest degree by the figure of Christ, "the beautiful God," on the middle pier (Fig. 422). At the same time it is the most excellent representation of Christ standing as a teacher, that has ever been designed and executed. This earnest head, full of dignity, should be cast and placed in every art school, in order to make an end of the dumb heads of Christ by the artisan. Not Thorwaldsen's Christ, but this Rheims' "beautiful God" should be offered in every show window.

If the "beautiful God" of Rheims be a masterwork of all the ages, then the accompanying representations in the tympanums and the hollows will not be thrown into the shade. Unfortunately space is wanting to reproduce and appreciate them. The lintel likewise is from the hand of the artist, who created the "beautiful God;" this shows these the entirely similar head of Abraham.

On the jambs of the west facade stand form after form of like perfection. The main portal is dedicated to the Mother of God. Her statue on the middle pier is not of particular value; but at the jambs stand real gems with scarcely an exception. There is first the annunciation. The archangel Gabriel presents an entirely excellent study of the clothing with the clearest and simplest treatment of the folds. Maria is less satisfactory;

the face is even flat. Then follow the meeting of Maria and Elisabeth. These two statues are beautiful, but fall entirely without the mode of treatment of all else; the colossal crumpled folds show the artist of the jambs beside the "beautiful God." If one considers the faces, this Maria so completely exhibits the type as Rauch and Schadow with us represent it, that in these two statues can only be seen the imitation of two mediaeval ones, a substitution that must have occurred about 1800, even if there be also scratched on the head of Maria "1394 X O.C." Likewise on the S. Chapelle in Paris, the old figure of Christ on the upper portal was replaced by an imitation a few years since; both stood beside each other for a time. That the old statue was not accurately imitated and that the new one was further much ruder, appeared at a glance. Also in the Rheims' "meeting" has occurred a substitution, certainly not by an inadequate art worker of the present day. This is also not affected by the fact that the corbels exhibit Gothic forms; these are likewise imitated. We recall to these two works at Bamberg. The entire left jamb is occupied by the presentation in the temple. Maria with the Child is represented with just as little attractiveness as in the annunciation; the more unpeautiful face and the same clothing, the latter being indeed better; on the other hand, S. Simeon is more perfect and his face is very successful; but the two companions are of inimitable perfection. Next the church doorway stands a young woman with both graceful and spirited face and the most engaging pose. The male companion is a beau of the time, with his moustache trained upwards after the fashion and his hair combed coquettishly on his brow (Fig. 423); he wears a small Jewish hat on his head. Beside him also stands a second companion, from his hat likewise a Jew, on whom Viollet-le-Duc confers distinction by a masterly representation in his Dictionnaire de l'Architecture Francaise etc. Indeed a masterwork!

The side portals are devoted to the sainted Archbishop of Rheims. On the left portal and at the left is S. Nicasimo (S. Nicaise) accompanied by two angels. The angel that stands next the doorway, in his grace, in the perfection of his figure, as well as in the arrangement of the folds, is a likewise unequalled masterwork like the "beautiful God," and it should exist

in all museums; but all these creations of the first rank are not once to be found in the Trocadero. The second angel has evidently received a new head, which is much too large. Beside follows S. Remigius (S. Remi) with his mother Cilinie and his pupil S. Thierry; all these are by the hand of another sculptor, who was probably earlier. The bishop and especially his pupil are very perfect. On the right jamb are represented the fellow sufferers of S. Nicasius, Ss. Jocundus, Florentius, Eutropia, Maurus and Apollinaris. Every statue is a masterwork and all are indeed from the hand of the sculptor of the presentation. On the front side of the buttress stands a female figure, apparently the "Church", that is very well modeled, unfortunately a gargoyle leaks above it, and it has been permitted to be injured by weather for years.

On the right portal stand the previously described oldest statues of Abraham, Moses etc., together with an entire series of excellent masterworks. We can only repeat for them the words of honor, that we have already applied to their relatives of the other portal. To write of the infinity of other sculptures in the hollows, gables and tabernacles is forbidden by the purpose of the present Heft, that should only give the heretofore lacking general review of mediaeval sculpture, and avoid the fundamental errors resulting from the sole consideration of Italy and of the ignorance of other countries. The sculptures of this Rheims facade lying above are also chiefly much weathered, and wherever possible, are designed entirely anew. One recognizes them at once by the Arab faces, that the unsuccessful sculptor probably held to be especially correct. Along the nave, the colossal angels in the shrines of the buttresses are usually of especial beauty. Likewise some sculptures high up on the transepts exhibit heads of particularly expressive character; thus the two statues named as Philip Augustus and S. Louis (Fig. 424).

Still we have not finished with the Rheims masterworks. At the west and within the cathedral, beside the middle entrance portal, excellent large statues are also placed in niches; the general arrangement is indeed not happy. We reproduce here the finest; they also date indeed from the time about 1250. Their appearance speaks for itself. There is at the lowest

part the communion; a priest offers it to a knight (Fig. 425); the knight in full armor is still protected by the chain mail of the early period; beside him stands a knight in Roman armor with a round shield and wearing a kind of scale mail, with a ribbed iron helmet on his head (Fig. 426). All of these three statues are masterworks of the first rank. On the other side of these are arranged male figures with lettered scrolls in their hands, worthy personifications of the minnesingers of that period. And these masterworks are arranged beside each other upwards. A sculptor's creation with definitely ascertained date and belonging to the third series of sculptures is further the south transept of Notre Dame at Paris. At the base of the portal is found the following inscription:-- (See text).

The story of the martyr's death of S. Stephen is represented in the tympanum. The small figures are all masterly modeled; they are also more beautiful than those of Niccolo Pisano, who must have studied in France at about this time. The Jewish "high council," before which Stephen was led vividly recalls in its way the contemporary Pilate of the choir screen at Nuremberg. Likewise the Roman soldier behind Stephen is of particular interest, since he shows how well the Roman soldiers' costume was known and studied.

Contemporary with the sculptures of this tympanum is the statue of the Mother of God on the north transept there (Fig. 429 ¹⁴²), a grand figure. To the end of this 13 th century also belongs the S. Leu from S. Leu d'Esserent (Fig. 430 ¹⁴²); the head and hands are indeed no longer old.

149. Extinction of Sculpture in France and Germany.

French sculpture died out about the end of the 13 th century, to put forth new bloom a century later with German aid. Germany adopted its sculpture from France, as we have seen.

295- Its architects traveled for a century into France to learn the new art there; but after returning home, they created with entire independence. They were not repeaters, but independent artists, and they left the most masterly works. Yet the art of sculpture died out in Germany likewise about the end of the 13 th century, and this art lived further only in the border land next to France, in ancient Lothringia, that had little or even nothing to show in early masterworks. Modern Belgium and

the Burgundy of that period from Bruges to Dijon developed an art, that nearly corresponded to Albert Durer's designs in painting, though with a precedence of a century. This Flemish school was then again drawn upon by France, when it began to recover from the distress of the hundred years' war. We shall best describe this period by the German sculpture.

150. Sculpture during the 12 th and 13 th Centuries.

If we now glance backward again to the French sculptures, two centuries, the 12 th and 13 th, present a great number of creations of sculptures, not equaled in abundance in any other time or country, not even during the exuberant Renaissance of Italy. How should one estimate researches in the art of sculpture, that either entirely ignores these infinite treasures or leaves them entirely untouched?

This legion of sculptures are almost exclusively found on 196 the colossal portal designs of French churches; they therefore stand under the ban of the same problem, and they naturally suffer from the standing reproach, as by the massed occurrence at one place. The south porch of the Cathedral at Chartres alone contains 783 statues and sculptures 149 ! If the goodness of the works suffers by the abundance, yet more does the appreciation. One cannot enjoy the most of them, since the most favoring eye gradually wearies. A work of sculpture is naturally best displayed and best enjoyed, if it be exhibited alone, if possible in a niche enclosed by architecture, that is only intended to enhance the sculpture. This is just the contrary of what Gothic architects intended. They desired to ornament the building by the sculptures, to animate and make graceful the outlines of the construction by the sculptures, but not to subjugate the architecture. They felt as architects, and their final aim was the building, which was a means for a purpose. It was otherwise with Grecian and Roman masters. Aside from the ornamentation of the pediment, the Greeks did not interweave their sculptures with the architecture. The art of sculpture appeared for itself. Sculpture demanded for itself alone attention and astonishment. The portico of the temple served it as a protecting canopy, just as the Loggia dei Lanzi is a protecting portico for the statues placed therein; this is all, for sculpture preserved only its own individual purpose.

Note 149. See Bulteau. p. 282.

Therefore to make the objection to Gothic architecture, that it only treated the art of sculpture as subservient, never permitting it to advance, is entirely erroneous. Had similar problems been proposed for the art of sculpture in the Gothic as in the Grecian period, then with the changed requirement, the product would likewise have been different. This changed result, the independent art of sculpture, would have also developed itself beside the sculpture closely connected with architecture. But such problems were wanting. This lay in the social conditions and is no characteristic defect of Gothic. One might much rather object to antique architecture, that it did not understand how to train the sister art in its service.

b. Sculpture in Germany.

151. 12 th Century.

Sculptures corresponding to the character of French art before and after 1150 have scarcely at all been preserved in Germany. Some remains have recently been found in Magdeburg; likewise may be seen in the Parish Church at Andernach a pair of similar figures in relief. Only about the end of the 12 th century did the art of sculpture begin to sprout. But then its development followed suddenly and in a thoroughly individual way.

The beginning is found in the East by the grave slabs at Wechselburg, Pagan, Magdeburg and Brunswick, the choir enclosure in S. Michael at Hildesheim and in the Liebfrauen Church at Halberstadt, the golden portal at Freiberg-in-Hartz and the rood screen at Wechselburg. In the West can only be mentioned the enclosure in the choir of S. George in the Cathedral at Bamberg and the portal of mercy there.

Let us consider these sculptures in detail. Their dates, like those of most buildings of the 12 th and 13 th centuries, were formerly quite erroneously determined; it was believed that they belonged to the middle of the 13 th century. There is no ground for the assumption of that date. For example, why should not all grave slabs have been prepared soon after the death of the person represented thereon, rather than generally half a century later?

152. Church at Wechselburg.

152. Church at Wechselburg.

Thus Dedo the Fat, who lies buried in the Church at Wechselburg near Röchlitz, died in 1190 after his wife had already preceded him in death in 1189; he founded the monastery of Zschillin-Wechselburg. Nothing was more probable than for his children together with the grateful monestic community to place a grave stone for him. The monastery deteriorated after a few decades; the children were dead; who would afterwards have a desire to erect a monument to the former owner? The ornament thereon shows forms that are well suited to the end of the 12th century. The tomb accordingly dates from the time about 1190. It does not alone exist in Wechselburg. A richer rood screen exhibits the continuation of this art; the existing pulpit was placed in the midst thereof (Fig. 431 150). We here meet again with the well known representations from France; the Christ within a vesica as teacher; at the sides being the sacrifice of Abraham and the erection of the brazen serpent in the wilderness. Beside the opening for this pulpit are represented the well known ancestors and forerunners of Christ; Daniel, David, Solomon and Isaiah. Christ is an entirely excellent work of the sculptor. High above the rood screen is crowned by a triumphal cross, with Maria and John at the sides, and that exhibits the crucified one in great perfection of representation.

Note 150. From a drawing of George Behrens in Brunswick.

We see before us here a series of sculptures, that correspond to about the second school of France. This also proves the correctness of the date given here; just the knowledge of French sculpture confirms the German dates. That the German architects for decades went to France and brought home with them French acquisitions is shown by the entire course of German architecture at the end of the 12th and the beginning of the 13th centuries. The close family connections of the Wechselburg counts with the French royal house were in favor of the contemporaneous practice of the art; a grand daughter of Dedo was the wife of Philip Augustus of France.

153. Cathedral at Brunswick.

It is the same for the second tomb, that of Henry the Lion and his wife Matilda in the Cathedral at Brunswick. Henry the

Lion died in 1195, while his wife had already preceded him in 1189. He was also the founder of this church and of its endowment. Why should not his children and the foundation chapter have erected the great grave stone for him? His later successors were not in condition to do so; they did not even erect a similarly imposing monument to his son, who was the German emperor Otto IV! Here continued the French family connections, even with an English intermediary, for Otto IV was properly Otto of Poitou. The painter who executed the great paintings in the Cathedral was evidently a Frenchman; Johannes Gallicus, or John Wale.

Does the tomb indeed appear French? I may doubt this. The extremely rich folds of the clothing are unknown in France; the faces above do not look French. It is an extremely independent German creation, even if French training should not be denied. Yet the form and the foliage of the corbels at their feet are those of the early Cistercian monastery. These corbels decidedly oppose its origin about 1250, but entirely accord with the time about 1200. Likewise the model, that Henry the Lion holds in his hand, does not show the early Gothic structure of the towers, but the later opened trefoil window beside the transept. To mention the grand and masterly details of the tomb, space is wanting; Fig. 432 ¹⁵¹ must speak for itself.

154. Golden Portal at Freiberg.

Even if it shines alone like the sun among the stars, it still has worthy companions in the sculptures of the golden portal at Freiberg in the Hartz mountains. In the tympanum is enthroned Maria with the Child Jesus; on their left is an angel and S. Joseph, on the right being the holy three kings, a lovely creation, that in its gracefulness and perfection is very closely allied to the enthroned Christ on the Wechselberg pulpit. At the jambs again stand the ancestors and forerunners of Christ. On the left is the unmistakable John the Baptist, on the right being David with the harp. Beside John are represented Solomon, the Queen of Sheba and Daniel, and beside David are Melchisedec, the Church and Nahum; they are true cabinet pieces. The rich folds of the clothing, the artistic perfection of the figures and the faces, which are truly native,

as well as the great skill with the chisel also elevate these creations far above those contemporary in France. Examine the particularly successful heads and feet. Especially perfect are the bodies of the resurrected ones and of the apostles in the hollows. Even the animals are satisfactory beyond custom; thus particularly the lions and the dragons on the imposts of the arches. The sole disturbing effect is that of the great heads above the statues and -- the recent substitutions. 152

Note 152. See Hasak, M. Geschichte der deutschen Bildhauerkunst im XIII Jahrhundert. Berlin. 1899.

That this portal entirely imitates the French portal and its series of figures is incontestable. And yet with what originality is it designed! The statues are not wrought on columns and are not stuck between larger columns; they stand free before the angle niches, without restriction in their outlines. These angle recesses recall in a notable way the much earlier southern solutions at Toulouse, and as already shown, those at Ferrara. The hollows beset with sculptures are separated by moulded rounds, and the tympanum is not supported by a separate lintel. But who might think of an independent and native development in the detailing of this portal, that has no predecessors and scarcely a successor? Only one unacquainted with the great number of preceding and contemporary French portals could hold this art of sculpture to be a native German Romanesque art. We shall indeed find a similar and older portal in the West in Bamberg; but this likewise shows the French school. Even the beautiful works on the choir enclosure in S. Michael in Hildesheim and in the Liebfrauen Church at Halberstadt cannot be regarded as a sufficient series of native ancestors. Thereon Romanesque blind arches in low relief in plaster are executed at large scale in plaster, the Virgin, holy bishops and the apostles, that may date as independent works from the time about 1180-1200. Likewise in the Cathedral at Halberstadt is found a triumphal cross, very similar to that at Wechselburg and of equal age, thus it must have originated shortly before 1200. But this also names nearly all predecessors.

155. Cathedral at Magdeburg.

The Cathedral at Magdeburg contains an entire sequence of the development of the art of sculpture. During excavations rece-

recently undertaken a sculptured slab was found, that entirely resembles the earliest French works of the beginning of the 12th century. High above in the choir stands a series of statues wrought on the clustered piers, three of which appear primitive; they represent S. Mauritius and John the Baptist. At the first glance, one is inclined to regard them as taken from the old cathedral; but the form of the shield shows, that they may have originated not much before 1200 and therefore must belong to the commencement of the building (1208). Their companions on the left of the observer, Paul, Peter and Andrew, on the contrary, very evidently belong to the second series of French sculpture, and therefore they are indeed by the second architect, that of the bishop's passage. They are also evidence for the date of the choir of Magdeburg Cathedral fixed by the author. In the lower story of the ambulatory is to be found on the right a tympanum, quite perfect; the resurrected ones and the Magdalene. Somewhat later must be the bust of S. Mauritius, a negre in a coat of chain mail, very faithful to life (Fig. 433¹⁵³). On the north side, the Cathedral even exhibits an entire portal adorned by sculptures, the golden portal. At first sight, it appears to belong only to the 14th century; the artisan's tympanum and the architecture of the protecting porch date from that time. On closer examination, one however sees, that the wise and the foolish virgins, who stand at the jambs, were wrought on small columns - two are still such - and stand on leaf corbels; this shows them to be 13th century work. Their rich clothing is likewise that of the 13th century, and indeed rather of its beginning than of its end. The picturesque folds, in which the sculptors of the period rioted accordingly, is quite astonishing and corresponds to that of the Tomb at Brunswick. One would not err therefore in deciding, that this charming flock of young maidens originated between 1230 and 1250. Furthermore, the cathedral also contains two bronze sepulchral slabs of bishops, that unfortunately have lost their inscriptions. The earlier plate must belong about 1150; it is interesting from the form of the ears of the bishop, that appear artificial, and from the little man, who sits at his feet and apparently draws a thorn from his foot, after the manner of the antique thorn-puller. This tomb plate

is in any case entirely similar to the small form of a bishop on the Korffum cathedral doors, that came from Magdeburg, designated as Bishop Wichmann (1152-1192). It is there named "Wicmannus, Bishop of Magdeburg."

Note 153. From a photograph of the Royal Messbildanstalt at Berlin.

The second sepulchral slab is more perfect and is a predecessor for the Brunswick plate.

156. Westphalian Sculptures.

In Westphalia are likewise found such early creations of sculptors. The earliest must be the removal from the cross on the Extern stone near Detmold, which, judging from the banner, must have originated in the time of Barbarossa about 1180. On the Cathedral at Paderborn is an entire portal, which is ornamented by sculptures in the French manner. On the middle pier 302 stands the Virgin with the Child; in the tympanum two angels swing censers; on the jambs are placed saints. The statues are no longer wrought on columns and belong to the second series of French sculptures; they must date between 1200 and 1220.

The porch likewise on the south side of the Cathedral at Münster contains on the contrary some masterworks of the first order. The sculptures there chiefly belong to a sculptor of the earlier and one of the later school. The statues on the wall beside the church portal resemble those at Paderborn and are not attractive; on the contrary, there stand at the side walls four statues of quite particular mastership. On the left is first a knight, slender and courageous, even if not elegant; 303 then Mary Magdalene with the box of ointment, richly clad in garments with folds and very faithful to nature; opposite is S. Laurence. This forms the climax of the abilities of this master, a truly monumental and conscious creation! Had it the advantage of having been wrought in marble in Italy, it would be found in all museums, and books would have been written about it and its master. Beside it stands a bishop, who evidently carries the corner stone of the building in his hand, a dignified study from nature, even if the head with the bishop's mitre has a somewhat coarse effect. A band exhibits the inscription:--

"I was chosen and died. I began the work and consecrated it

on the feast of Maria. There were many years but the one aim."

He was very probably the builder, Bishop Dietrich of Isenburg, who laid the corner stone of the Cathedral in 1225 and died in 1226. This monument to him was evidently erected by his successor. The fixed date (after 1226) proves the correctness of all other merely estimated dates.

These Germans far surpassed their French instructors in individuality and perfection. But while the French have made the creations of their sculptors available for study by casts in the Trocadero, this has never been done in Germany.

157. Cathedral at Bamberg.

Let us now turn southward. The Cathedral at Bamberg contains truly priceless works of the art of sculpture, that chiefly belong to two successive masters. The Cathedral was burned in 1181, and the rebuilding appears to have progressed so far about 1200, that the towers were built. In 1237 the Cathedral was dedicated. Now are to be found in the interior on the enclosure of the choir of S. George the forms of apostles in high relief, that look very archaic, but are excellently wrought (Fig. 434). They dispute in pairs, just as occurred in France; their heads are quite peculiarly prominent creations. They belong to about the transition from the first to the second school and may have originated about 1200. We meet with the same sculptor's hand on two portals on the exterior. On the northeast tower stands the so-called portal of mercy. In its tympanum is enthroned the Mother of God with the Child Jesus; on the right are a king and queen with halos, apparently the emperor Heinrich and the empress Kunigunde, the founders of the Cathedral. Therefore the king also holds the model of a church on his arm. Since the empress was first spoken of as a saint in 1202, the tympanum cannot well have originated earlier, in which she wears the halo.

On the princes' portal on the northern side, the jambs are beset with small statues, one of which stands on the shoulders of another, the apostles on those of the prophets; some of these figures also belong to the first sculptor. The portal later suffered some changes, and thus some of these apostles and prophets have been replaced, as well as the tympanum. The judgement of the world is there reproduced in the usual French

manner of representation. In particular, Abraham's bosom and the trumpeting angels are exhibited on the imposts of the arches. At both sides of this portal stand on small early Gothic columns the statues of the "Church" (Fig. 435 ¹⁵⁴) and of the "Synagogue" (Fig. 436 ¹⁵⁴). They are perfect gems of the German art of sculpture; dignified figures, grand folds in garments and spiritual faces, such as only the best French works exhibit. Of special interest is the figure of the "Synagogue," in which with inimitable mastership the appearance of the figure through the clothing is effected; even the eyes appear to look through the bandage. This second sculptor is also found on the portal in the southeast tower. The jambs are there adorned with the figures of S. Peter, of Adam and Eve on one side of Ss. Heinrich, Kunigunde and Stephen on the other side; but they do not attain to the perfection of the "Church" and the "Synagogue." That all these creations of the second sculptor are the purest creations of early Gothic (about 1230-1240) is shown by all the foliage and the canopies.

Note 154. From a photograph by Haaf in Bamberg.

Then in the interior of the Cathedral yet stand some master-works of this sculptor's hand of the very first order. There is especially the "meeting of Maria (Fig. 537) and Elisabeth", who were heretofore held to be sibyls, as the noblest clothed figures. As before stated, they recall in each the details of similar statues of the west facade at Rheims. The sculptor architect evidently worked in Rheims and there learned his art. The similarity of the female figures is so great, and before all the face of Maria, that the assumption is at once, that the same woman was the model of the sculptor at Rheims and at Bamberg. Since in Bamberg this face is shown by both the "Church" and by Maria, and the "Synagogue" resembles her like a sister, while in Rheims this face exists in detail, one might be tempted to permit the imagination to guide the chisel a little and to assume, that the young artist had married in Rheims and taken his young wife, her sister and mother, to Germany with him, where the mother was afterwards represented as Elisabeth. Hence the really quite inexplicable similarity, that these two faces exhibit. Men would object, that those at Rheims are not at all mediaeval products, but imitations. Cert-

Certainly, but imitations, that men sought to make as exact as possible, even if the mediaeval skill had been lost. A Belgian prefers to read above on the head of the statue of Maria "1394 X O C." In any case neither the statue nor its substitute dates from 1394.

We likewise appear to possess the name of our Bamberg artist. The following document of Bishop Eckbert from the year 1229 has been preserved.¹⁵⁵

"In the year of the incarnation of the Lord 1229, and in the third indiction, we Eckbert, by God's grace Bishop of Bamberg, consecrated the altar in the Minster of S. Peter, located on the right side toward the south and toward the choir, in honor of our Lord Jesus Christ and of the most glorious Virgin Maria . .

That also the memory of us together with our loved brother in Christ Wortwin, the architect, who both as a faithful man and as a lover of God's service has employed money and knowledge for the building, consecration and equipment of the afore-said altar, may be forever preserved in this place, that we ask, admonish and require from you in God the Lord, pious Heinrich, to whom we have first given the prebend of this altar, and from all thy successors forever

"Given in the 27 th year of our pastoral office."

Note 155. In the Royal Bavarian State Archives at Munich.

Thus that this master of the wortwin was the architect of the cathedral in the year 1229 must be accepted as certain. That he was already such for some time is shown by the amiable appellation of "beloved brother in Christ." Since we have further sufficiently shown, that the architect was likewise the sculptor, we thus have to see in Wortwin evidently both the creator of the early Gothic portion of the cathedral, as well as of the masterly early Gothic sculptures.

Finally, as already stated, there is also a king on horseback placed on a colossal corbel in the interior; evidently likewise from the hand of Wortwin, if the preceding deduction be correct. For the elevated position, this "stone guest" and his horse are well modeled. Well meriting examination is the foliage of the corbel. Wortwin was an excellent ornamentist; this is shown also by the charming leaf below on the shaft of the column of the "Synagogue."

158. Cathedrals at Naumburg and Meissen.

The Cathedral at Naumburg contains a similar number of proud art works, that indeed originated after the year 1249. From that year has been preserved a document of Bishop Dietrich, in which he further arranges the reception of the faithful, who give alms for the completion of the building, into the praying brotherhood. Within, around the early Gothic western choir stand the statues of the founders of the bishopric, among which are also two pairs:— Margrave Eckhardt and his wife Uta, opposite being probably Margrave Hermann and his wife Regelyndis. The first pair is particularly masterly, and especially the M Margravine Uta; the gentle features and the rich clothing are quite particularly successful. Likewise the female figures of the long choir are just as independent as charmingly designed creations. The climax is formed by the figure of a subdeacon, that holds a book board. If it stood anywhere in Italy, all museums would have opened their doors to it; it is here not at all prized in the locality. It has been exposed in a corner unprotected from all injuries by useless hands.

On the rood screen, that encloses this western choir, is represented the story of the sufferings of Christ; the last supper, the thirty pieces of silver, the betrayal on the Mount of Olives, the maid and S. Peter, Christ before Pilate, the scourging and the bearing of the cross. We here see nearly all, that shows antique study in Niccolo Pisano; strong, subordinate figures, the closest filling of the sculptures with animated men; only the Italian-Roman faces are wanting. We see here, that the peculiar art of design attributed to Niccolo was a contemporary mediaeval knowledge, here as in France on the choir enclosure of Notre Dame in Paris.

The painting of the Naumburg Sculptures is very well preserved, so that the entire splendor of color can again be represented on paper.

The successors of the Naumburg sculptures are those in the Cathedral at Meissen. They are so related to those at Naumburg, that one might almost decide for the same hand; they certainly present no advance but rather a decadence toward spiritless power. In the choir are placed the emperor Otto the Great and one of his two wives, opposite them are the Bishop S. Donatus

and John the Evangelist; in the chapel of the south side are Maria, John the Baptist and S. Paul.

159. Rhenish Sculptors.

The countries on the lower Rhine are nearly bare of all creations of sculpture. In Maestricht is to be found at S. Servatius a portal of the second school arranged entirely after the French style, which perhaps originated about 1220; it exhibits no particular charm. In the Liebfrauen Church at Roermond stands the tomb of the founder, Count Gerhard of Gueldres, and his wife (see the preceding Heft of this "Handbook"; Art 94, p. 122) of the same time (died 1229); it does not at all equal the grave slab at Brunswick. The tympanum on S. Cecilia at Cologne and that in the City Parish Church at Andernach may yet be mentioned. This exhausts everything.

First in Treves do we again find ourselves in presence of a high art. The Liebfrauen Church has a west facade richly adorned by sculptures. The tympanum shows Maria and the Child, on the left being the three holy kings, on the right the presentation in the temple. The hollows are beset with angels and ancestors in the usual way; furthermore in the outermost hollow are the wise and foolish virgins. The tympanum and the ancestors are very beautiful creations. Of the statues on the jambs only the "Church", the "Synagogue" and S. John have remained. Further above and beside the tympanum of the doorway stand Noah and Abraham, over which are two prophets above each and twelve apostles. These four statues are excellent in treatment, their faces being spirited studies from nature. Beside the window is represented the annunciation; Maria with the angel.

Since the Liebfrauen Church was begun in 1227, these sculptures must have originated between 1230 and 1240. This entirely harmonizes with the French development, which at about this time passed from the second into the third school.

160. Church at Wimpfen-im-Thal.

The sculptures at Wimpfen-im-Thal, that were executed between 1261 and 1278, may be briefly mentioned here. Only those standing within and around the high altar deserve consideration; particularly S. Antonious, the hermit, is a very successful creation from nature. No suggestions of the Strasburg western

facade exist. It is not a youthful work of Erwin of Steinbach.

161. Minstersat Strasburg.

The Strasburg Minster also corresponds to its high fame by its sculptures; they stand at the climax of German creations. Two artists are chiefly to be considered; the one that created the sculptures of the south transept, and Erwin, who was indeed also the sculptor of its west facade.

On the south transept are first of all most striking the statues of the "Church" (Fig. 438) and of the "Synagogue" (Fig. 439); two dignified female figures in long thin garments, similar to the statues of the north transept at Chartres, but standing far 3/0 elevated above them in artistic perfection, as well as in expression of human individuality. The "Church" with the crown on her head, in the right hand the banner of the cross and in the left the chalice, makes a movement with the upper part of her body towards the "Synagogue", to speak to her conscience. The "Synagogue", without crown or mantle and with broken flag staff and reversed table of commandments, her eyes bandaged, turns away her depressed head, incapable of conversion. Nowhere, not even at Bamberg, are these two figures equaled. The German pupils far surpass their French instructors. To wish to assume that the creator of these statues was a Frenchman would be to suppose that every Frenchman excelled himself after passing the frontier.

The same sculptor's hand also created the two round-arched tympanums over the doorways and the "angels' pier" inside. Within the round arches are represented the burial of Maria and her coronation by her divine Son; this burial is very skillfully modeled within the round arch with as much freedom and willfulness, as we may see by Niccolo in his descent from the cross on the Cathedral at Lucca. There all this shows the antique influence; here may one yet observe that such a mode of creation is truly mediæval. The thin robe and the sharp and straight folds suggest the same artist, who created the "Church" and the "Synagogue"; the face and figure of Maria seem to raise this into certainty. In any case, this figure is a masterly study from nature.

The "coronation" at first makes an entirely different impression; but the face of Maria and the thin garment with its folds

above the feet again show the artist of the "Church" and the "Synagogue". The head of Christ and the angels are the finest parts of this sculpture. On the angel's pier stand trumpeting angels with apostles beneath them, which are entirely similar to those of the burial; also the canopies and the corbels are like those of the "Christ" and of the "Synagogue."

If we now desire to fix the age of these sculptures, we have the first basis in their similarity to those of the Chartres transept. Therefore they date from the beginning of the 13th century. If the age of the transept may be determined, then is also that of the sculptures fixed; for its vaulting presupposes the angels' pier. For this purpose, we must follow the dates of the minster backward. The corner stone of the west facade was laid in 1277; "in the year of the Lord 1277 under the blessed Urban, the glorious work was commenced by master Erwin of Steinbach" was formerly on the portal of flowers. And in a missal at Wolfenbüttel is to be found this note:— (see the text).

Thus the nave was complete in 1275. If we compare its forms with those of the transept, 30 to 50 years separate the two, and thereby we likewise for the sculptures come to the time of the Chartres transept. They were ascribed to Savine, the daughter of Erwin, since the apostle Paul, who formerly adorned the jamb there with the other apostles -- the revolution destroyed them -- bore a scroll on which was the following:—

"May the grace of the divine clemency be upon Sabina, by whom I have been made a statue from hard stone."

This could not have been a daughter of Erwin about 1220, but at most his mother.

In the museum of the Frauenhaus (women's house) have been preserved two charming statues, a princess and a youthful ecclesiastic, who represent a further step of development and lead up to the glorious west facade. It is assumed that they come from the destroyed rood screen. Arntz discovered nine other statues high up in the tower, that are evidently their companions; every one a masterwork! Their creator must be the younger architect Rudolf. 156

Note 156. See Hasak, M. Geschichte der deutschen Bildhauerkunst im XIII Jahrhundert. p. 111. Berlin. 1899.

Let us now examine the west facade. As in France, it exhibits three portals, which are adorned by sculptures. The middle one is dedicated to Maria; only the ancestors on the jambs are old, but except one or two, of no particular beauty. In the lower part of the tympanum, which is likewise old, the descent from the cross is prominent by its especial perfection, and I do not know, how the contemporary works of Niccolo at Lucca excelled it, except that those were in Italy. On the other hand these are strikingly similar.

But the side portals contain the greatest gems of Erwin's art. On the north portal are represented the foolish and wise virgins, among which particularly the one holding the apple is interestingly conceived (Fig. 440). All are formed from nature and exhibit a series of beautiful German maidens, for which no models are found in France. On the southern portal are represented the virtues as crowned female figures, as they slay the vices at their feet with the spear (Fig. 441). These are very noble creations, especially if compared with the much later Italian works. The grandest and most beautiful figure stands on the jamb at the right of the observer as the second from the outside (Fig. 442); Viollet-le-Duc already drew this as the most prominent in his entire treatise. The German excel the French women, although those of Rheims look German, like most statues in north France. Those provinces were then not so mixed with southern French; the stately German was the ideal of beauty, not the little Parisian of today.

Thus we have ascended to the climax of the early mediaeval sculpture; now to descend until a new impulse appeared in Italy a century later, whose climax is the so-called early Renaissance, a truly mediaeval art and its second climax.

162. Minster at Freiburg.

The Freiburg Minster presents still a great number of expressive creations in sculpture, that indeed originated at the same time as those of Strasburg, but lack the perfection of the latter. On the middle pier of the portal may be seen Maria with the Child, on the jambs are the annunciation, the meeting, the three holy kings, the Church and the Synagogue; chiefly subordinate figures without faults and also without excellencies. The representations in the tympanum are quite unenjoyable. Only at

the sides of the tower hall are to be found a great number of sculptures, that are worthy of examination (Fig. 443); the seven free arts are evidently represented thereby. We further see, as at Strasburg, the devil with all sorts of reptiles and boils on his back, the woman World with the sheepskin, and the foolish and wise virgins. None of these works possesses especial charm. Only in the interior do we stand in the presence of a spirited master. On the back of the mullion of the portal is likewise represented Maria with the Child, a beautifully slender figure. We here see the pose, later so exaggerated -- one hip bent far to one side -- already treated with power. Also the two angels, who extend their lamps toward each other on the right and left, exhibit the same forced pose. We find ourselves with these figures already in the 14th century. But sculptures executed with such spirit as here are seldom or never to be found in that century of complete dullness. We might pass over it, did not a new art arise on the western border of Germany, which put forth its separate blossoms.

163. Flemish Art of Sculpture.

In Dijon, the capital of the Duchy of Burgundy, existed a school of sculpture of Flemish origin, which created from 1385 to 1411 the great monuments of the Carthusian Monastery of Champmol there; and indeed the figures from the portal of the Monastery, the praying forms of Duke Philip the Bold (Fig. 444) and his wife, together with the Mother of God on the middle pier and the Moses-Fountain (Fig. 445). Jan de Marville, Nicolaus Sluter and Nicolaus van de Werve were the masters, besides 20 Flemish assistants and 6 other workmen, among whom are apparently to be found but 4 French names. ¹⁵⁷

Note 157. See Dehaisnes' corresponding Essay in Revue de l'Art Chretien. p. 449. 1892.

In Bourges, Andre Beauneveu from Valenciennes executed works from 1390 to 1402, that Sluter went to inspect, and the king Charles VII had erected by Jean de Roudy, called Jean de Cambrai, the Tomb of the Duke John of Berry. There also completed it, Etienne Robillet, Paul Mosselmann of Ypres and several other Flemish artists. When in 1459, king Rene desired competent sculptors for the completion of his tomb in Angers, he called Flemings:-- ¹⁵⁸ "The Flemings, who were engaged in that (the

tomb) of the late duke of Berry, --- for, as we have heard, they are the best workmen that are in these marches."

Note 158. Lecoy de la Marche. Extraits des comptes et memoriaux du roi Rene. p. 57. Paris. 1878.

When in Rouen at about the middle of the 15 th century, the 90 choir stalls in the cathedral were to be carved, besides P Philip Viart of Rouen, Paul Mosselmann and Laurent were brought from Ypres, to which were added Gilles du Chatel, called the Fleming, and Hennequin of Antwerp with other Netherlanders.

The Duke Philip the Good had executed near the Celestines in Paris between 1440 and 1450 a tomb for his sister Anna of Bedford by Guillaume de Velouton.

About the same time, the duke had erected in S. Peter at Lille a yet richer tomb for Louis de Male, his wife and daughter, by Jacques de Gerines from Brussels, and in 1485 he had executed at Bruges a grand tomb for his wife Michelle of France by Gilles de Backere, Tydeman Maes and several other artists from Bruges.

Thus we see in this time, in which the documents afford light, a strong current of Low Germans tending toward Burgundy and France, who created art works there. Was it not the same in the early Gothic period, even if in lesser degree? May perhaps the Germans have not merely learned in France, but have also long worked there in independent conditions? Or was it merely the miserable hundred years' war, that produced this invasion of Flemish artists into pauperized and depopulated France? These Flemish works exhibit that treatment of the heads and of the clothing, which we later find again with Albrecht Durer and Rembrandt van Ryn. Men constantly depreciate more in the working out of the pose and the representation of character. The commissions have even changed. These no longer concern great buildings to be decorated, to represent in the Houses of God the accessories from Holy Scripture and the legends of the saints; princely givers of commissions require the veneration of their followers. This problem was presented likewise to the yearly Gothic sculptors, but not so exclusively; the great monumental problems of the architecture were the most important. But if the commissions changed, the Gothic yet prevailed for a century longer, and even this art of sculpture, entirely chan-

changed in its objects and mode of execution, is still the art of sculpture of the Gothic. It is remarkable within what a narrow horizon and with what unjustifiable limitations the "Gothic" is restricted. Men proceed likewise with Christianity. They believe that sensually happy heathendom represented the body; thereby it created its beauty, and that this is true art. The ascetic Christianity fled from the world and represented only the spiritual occurrences, entirely without regard to the body; therefore in mediaeval art are the bodies so unnatural and so bad. Can one make a greater mistake? In the entire art of sculpture of the middle ages treated so far, we have found the representation of spiritual occurrences just as little, as is the case in the antique. Here as there is the representation of commonly known things; among the Greeks are depicted the myths of gods and heroes; in this period of the middle ages are representations from Holy Scripture and the legends of the saints. The sole difference consists in this, that the Greeks employed the nude therein, even if not in the unpleasant manner of today, while the middle ages neither saw naked men at large nor could represent such, since neither Holy Scripture nor the legends afforded opportunity therefor. That the "soul" of the body evaporated beneath the clothing is strongly opposed by all examples heretofore exhibited; everywhere the stately bodies appear dignified through the clothing.

The representation of the spiritual life in sculpture and painting is the invention and the merit of the Italians. This representation gradually branched from mediaeval art to attain its most masterly climax in the Italian "early Renaissance"; it is not anything whatever of the antique. This depiction of the life of the soul first and especially occurs in the former objects from the Holy Scriptures and the legends, which are likewise not antique. The Renaissance also employed therefor in the truly mediaeval manner the faces and bodies of its vicinity, and not those of the antique. Hence for the antique influence there remains only the single proved procedure, that these masters of the so-called early Renaissance regarded the antique and analyzed it as desirous of knowledge and to learn, to then proceed and create from their own breasts, without imitating the Greeks.

164. German Sculpture in the 15 th Century.

Then back to the further course of the later sculpture in Germany.

The 14 th century almost entirely passes out of consideration; there is scarcely the mention of the art. Even the busts in the triforium of Prague Cathedral, which were perhaps by Peter Parler (1356-1381) are not particularly prominent. The stiff tombs of bishops and knights in the cathedrals and minsters are all merely petty art works. The second half of the 15 th century first shows again artists in sculpture in Germany. First of all are the grave slabs of the empress Leonore, the wife of the emperor Frederic, at Wiener-Neustadt, and that of the emperor himself in S. Stephen at Vienna, which were evidently produced by the same hand. The empress died in 1467; the inscription runs as follows:- (See original text).¹⁵⁹

Note 159. See Mitt. der K. K. Zentral Kommission etc. p. 1 108, 104.

377 The artist has rioted in the richest treatment of the garments; the grave slab of the emperor is in particular an ornamental work of the first rank. Its creator was Nicolaus Lerch, an architect, whom the emperor called to Vienna in 1467.

There was formerly to be found at Wiener-Neustadt a tombstone with the following inscription:-¹⁵⁹ "In the year of the Lord 1498 on the day of S. Janat, there died the artistic master Nicolaus Lerch, who cut the tombstone for the emperor Frederic and that was master of works for the great building at Strasburg and a citizen thereof."

In Nicolaus Lerch, we indeed have before us a branch of that Flemish school of sculpture, which had for a century supplied Burgundy and France with artists. He likewise created the doors of the Cathedral of Constance in 1470.

He was succeeded by that race of sculptors generally made known by the names of Adam Krafft, Veit Stoss, Tillman Riemschneider and Peter Vischer, and that forms the conclusion of German Gothic. Peter Vischer already passed over into the forms of the Renaissance. The works of this master are so numerous, that it is impossible to enter upon them more fully here. This art of sculpture had almost entirely given place to wood carving. The technik and more of wood carving determ-

determined the entire appearance of this art; moreover the Philistinism of that time is so stamped upon the art works to such a degree, that they present little attraction for our art of design.

c. Sculpture in Italy.

165. Sculptures in the 11 th and 12 th Centuries.

We come now to Italy, the only land in which the mediaeval sculpture did not stagnate and die a premature death. Italian mediaeval sculpture is indeed the latest born sister; but it grew to not merely equal beauty, but left behind a posterity, that conquered the new domain of the art of sculpture and thereby created new forms.

Before the 12 th century no figure representations of importance are found in Italy. One must then go back before the year 1000, where we possess in the representations on the golden covering of the high altar of S. Ambrogio at Milan the evidence of the blossoming of a prominent school of sculptors in repousse metal work.

The 12 th century exhibits some portals with sculptures, properly fixed in date, that certainly are not in the rich French style. There is first the main portal of the west facade of the Cathedral at Ferrara. On the beautifully wrought tympanum is the inscription:-

"May all people coming here praise for centuries the wise a artist Nicholas, who carved this."

And on the front of the protecting porch is:-

"In the year 1135 was this house of devotion built."

Therefore we here have a sculptured creation contemporary with the west facade of Chartres. Does it resemble the Chartres sculptures? Yes, and no. While the architecture recalls the art of Chartres and Bourges, the sculptures are quite unmistakably allied to those of Arles and Toulouse. The tympanum, that represents S. George in combat with the dragon, vividly recalls in ornament, arrangement and work that of S. Trophime at Arles. Even the head of the saint projects within the border like the head of Christ at Arles with both artistic freedom and skill. The figures on the jambs are wrought diagonally, exactly like those of Gislebert in the Museum at Toulouse. Their halves are employed as terminations to the niches just 1

like those at Toulouse.

This sculptor Nicholas created two similar portals on the Cathedral and on S. Zeno at Verona. On the Cathedral may be read:-

"To the wise artist Nicholas, who sculptured this, be the praise of the people coming here for centuries."

And on S. Zeno:-

"The wise artist Nicholas, who carved this, will we all praise and pray to Christ the Lord, that he may give the heavenly kingdom."

The Italians are always very euphonious and vain; the northern artists hesitated to attach their names to their art works. Those of northern France indeed had much better reason to place their names on those colossal creations than the Italians on these petty works. Anything especially new is not found on these two portals.

A similar portal is likewise found on the Cathedral at Piacenza.

The Cathedral at Modena possesses a number of portals, that were inserted afterwards and are therefore later than the Cathedral itself. They can only date from the consecration in the year 1184; De Dartein ¹⁶⁰ indeed gives for the south portal only the year 1209. This portal with very beautiful scholl work, but adorned by statues of little prominence, is therefore no longer referred to the sculptor Wilhelm, whose inscription on the west facade of the year 1099, we gave in the preceding Heft of this "Handbook" (Art. 171, p. 236); at most he is the creator of the remains of an earlier building inserted in the west facade; yet these are so rude, that they would meet with no consideration in any country other than Italy. The sculptor Nicholas of Ferrara and Verona shines as a solitary and very early star in the sky of Italy.

Note 160. In De Dartein.

On the Cathedral and the Baptistery at Parma, as in S. Donnina near Parma, we then meet with numerous works of sculpture, that exhibit the progressive development at the end of the 12th century. Benedetto Antelami was the creator of the works at Parma, where he is vouched for from 1178 onward. In the Cathedral at Parma is to be found a descent from the cross,

that once formed a part of the pulpit (Fig. 446); it bears the following inscription:-- (See original text).

3/9 Aside from the good determination of the date (1178), the entire representation is stiff and unpleasing; on the contrary the ornament is excellent, both the grand interrupted scholl work, as well as the bud like ornaments of the hollow above. This strikes the eyes pleasantly likewise on the contemporary works on the Cathedral of Modena, on the portals and the crypt there. Also stately are the flower corollas, from which the sun and moon look forth. Otherwise this descent from the cross exhibits the usual composition, on one side being first the "Church", then Maria, John and three women, on the right the "Synagogue," the Roman captain and the soldiers, who cast lots for the seamless robe of Christ.

In 1195 we find Benedetto engaged on the Baptistery at Pisa. Whether he was also the architect is scarcely to be decided. On the lintel of the doorway is found the following inscription:-- (See original text).

In the round-arched tympanum is represented the adoration of the three holy kings, almost exactly as on the golden doorway at Freiburg. But what a colossal difference in favor of the German master, who produced his work about the same time! Around are seated the prophets, who hold busts of the apostles. All these ancestors wear the melon-shaped caps as at Chartres and Arles. On the lintel is shown the baptism in Jordan and the beheading. The tympanum of the side portal is quite similarly designed; in the middle is Christ as the judge of the world with bared breast, showing the wounds; on the right and left are angles with the implements of crucifixion. Hence about the usual French representation. Around are the twelve apostles and on the lintel is the awakening of the dead by angels blowing trumpets. How puerile is all this in comparison with contemporary French and German creations!

The tympanum of the rear portal exhibits the mediaeval story of the man, who has climbed a tree in order to delight himself with honey from a beehive. All at once he perceived beneath him two beasts, one black and one white, night and day, who gnawed the roots of the tree, and a dragon that threatened to swallow him as soon as the tree should fall; beside are repres-

represented the sun and moon in antique style as Phoebus and Luna. On the lintel beneath this tympanum, Christ is in the middle with the lamb of God and the Baptist represented at the sides; Christ holds a book with the inscription:- "I am alpha and omega." Schnaase and Lübke read this well known passage of the Bible as "I am Phaeton", and therefore they thoroughly pilloried the heathenish Christianity of the middle ages.

The architecture of the Baptistery is otherwise entirely early Gothic, even if the whole produces externally an unusual impression.

The interior still exhibits a great number of sculptures, that apparently are divided between two hands; those firmly connected with the construction, like the angels in the upper round arches and the "Majesty" over the altar, belong to Benedict, while those placed free in the triforium are very much advanced and look far more like French. They are very successful figures, which belong to a greater treatment. Likewise here in Italy is to be found the graduated evidence, in spite of the rarity of the creations, that the Italian architects and sculptors traveled into France, the tested land of the arts of building and of sculpture, as well as of the sciences.

188165. Sculptures in the 13th Century.

Benedict Antelami appears also to have engaged on a third building, on the west facade of the Cathedral of Borgo S. Donino near Parma. Beside the middle portal and beside many small and not prominent representations, there stand the great statues of two prophets, that are both monumental and perfected in design, and are similar to the statues on the exterior of the Baptistery. By the inscription, one is King David, the other being the prophet Ezekiel (Fig. 447); the latter wears on his head the melon-shaped cap. Together with the Jews, who stone Stephen on S. Trophime at Arles and wear the same cap, this affords the explanation of this peculiar head covering; it appertains to the prophets and the leaders of the synagogue.

From the time after 1200 then comes the ciborium over the high altar of S. Ambrogio at Milan, whose age has experienced the most diverse decisions.

All sculptures heretofore described indeed show a knowledge

of the contemporary development of the art of sculpture in France, but with an entirely independent conception and reproduction, however weak this may be, but the Cathedral at Ferrara presents in the upper story of its entrance porch, then above the works of Nicholas, a purely northern French creation of about 1220 (Fig. 448). In the tympanum is enthroned Christ as judge of the world, on the right and left being two angels with the implements of martyrdom; Maria and John kneeling at the sides; along the spandrel of the gable are represented musical ancestors and angels. Below the gable the angels are trumpeting for the judgement of the world, at their sides being the blessed and the damned. In the pointed arch over the porch is represented the bosom of Abraham and the gulf of hell. All very skilful and purely French; only the low inclination of the gable and the rest of the architecture of this addition to the west facade seems to indicate, that it was an Italian, who was trained in France and only felt in the French manner.

32/ Similar works are the western portals of the Cathedral at Genoa (about 1200). The artist was a highly gifted ornamentist and worked in the French transition style. He must also be the creator of the seven branched candelabra in the Cathedral at Milan with its charming little sculptures and masterly ornament.

Other sculptures do not appear to have been left in upper Italy by the 13th century. Such are found at about that time only in Tuscany in middle Italy.

At Pisa, Lucca and Florence a number of pulpits and tympanums exhibit sculptured creations, that form a few fixed points in the great void.

167. Sculpture in Tuscany.

Here in Tuscany we also come at last to the unremittingly studied Niccolo Pisano. He had no predecessor. Tuscany could not show even the smallest spark of the art of sculpture, that had passed from France into upper Italy in the 12th century. Only when sculpture had reached its climax in France and Germany and had covered the churches with innumerable creations of sculptors, are to be found in Tuscany the first stirring of this art. For what the mediaeval development so far knew, it is natural to suppose that Niccolo Pisano was a pupil of the French; his appearance without precursors makes this especially

natural.

168. Master Guamons.

In the 12th century Tuscan "art" does not once show equally able comrades of Nicholas of Ferrara. On S. Andrea at Pistoja master Guamons and his brother Andreas have indeed proudly inscribed beneath the representation of the holy three kings on the lintel of the principal portal; yet the whole is truly wretched:-

"This work was made by good master Guamons and his brother . Adorat."

322 And on the underside is:-¹⁶¹ (See original text).

Note 161. See Schnearschow, S. Martin of Lucca and the Beginnings of Tuscan Sculpture in the Middle Ages. p. 37. Breslau. 1890.

On the lintel of the doorway of S. Giovanni Fuorcivitas, he again calls himself:-

"Good master Guamons made this work."

169. Biduinus and Bigarelli.

On a similar plane stands Biduinus in 1180 at Lucca. The activity in the art of sculpture is so slight, that only toward the middle of the next century do some works again occur, shortly before Niccolo Pisano. The stately baptismal font in the Baptistery at Pisa bears the following inscription:-

"In A. D. 1246, under Jacob, rector of the place, Guido Bigarelli of Como executed this work."

That indeed does not exhibit figure representations; but it most certainly determines the sculptor, who executed the pulpit of S. Bartolomeo in Pantano at Pistoja. So far as concerns the front facade, an advance in the figures is indeed to be seen; but a transition to the mastership of Niccolo does not exist. One merely sees that the series of forms employed by Niccolo is somewhat extended and that they vary somewhat from the French. Otherwise Guido indeed comes from upper Italy.

170. Niccolo Pisano.

Still not everywhere is satisfactory the decision first stated by Vasari, that Niccolo became what his works show him to be by imitation of the antique, entirely aside from the Etruscan ancestors. There were again found on an antique sarcophagus of Margravine Beatrix certain figures; but the Christian

series of ideas, that he brought out into artistic expression with such certainty, remains without model or predecessors. Crowe and Cavalcaselle therefore, basing on a document of 1266, that named him as "master Nicola Pietri of Apulia," stated him to be a student of southern Italian art. There must have been a mysterious mixture of Byzantine-Arab-norman art as a foundation for the antique endeavors of emperor Frederic II to have created a school of sculpture. The gold coins of Frederic II and sculptures in Ravello are alone mentioned. It is too remarkable with what energy the only possible explanation was excluded, that Niccolo was a pupil of the French. And yet this is proved already by the architectural details of the pulpit, indeed as well by the perforated trefoil arches of both, and particularly by the capitals on that in the Cathedral at Siena. Likewise Gothic tracery window in four divisions is in the background of the adoration of the three holy kings on the lintel of the left doorway on the Cathedral at Lucca and shows Niccolo's knowledge of mediaeval Gothic.

But not merely these details betray Niccolo as a pupil of the French; the entirely independent treatment of the figures recalls the hundreds and thousands of similar creations of the French, to whom the modeling of artistically perfected figures was no secret mystery, as to the Tuscan predecessors and contemporaries of Niccolo. In any case, Niccolo exhibits himself in his creations as an entirely independent pupil of the French, who carried his individuality freely even to a breach, just like his German fellow pupils.

Let us now consider his works in detail. The proved creations of Niccolo are the pulpit in the Baptistery at Pisa (1260), in the Cathedral at Siena (1266) and the Fountain at Perugia (1273.1280). To these are then added the doorway at the left of the observer, on the Cathedral S. Martino at Lucca, whose forms can only be attributed to him.

The pulpit at Pisa exhibits on its parapet the life of Christ from the annunciation till the last judgement; the annunciation and the birth are interwoven in a single representation. The form of the reclining Mother of God is referred to the similar female figures of the Etruscan sepulchral urns. It is certain that the similarity exists but in the like representation on

the pulpit of Guido of Como at Pistoja, Maria lies in the same position and with the covering folded in the same manner. The remaining representations on this pulpit present no peculiarities. This is indeed most remarkable in the creations of Niccolo; with all power of formation and mastery of the human body, none of his creations arouse especial surprise; none invite the eye to linger thereon. On the contrary, the eagle beneath the reading desk holds the eye fixed; it shows a quite peculiar mastery in the treatment of the animal world. Likewise the sheep in the stable at Bethlehem and the horses are particularly successful.

224 The pulpit in the Cathedral at Siena resembles its sister in the Pisan Baptistery almost completely. -- The Fountain at Perugia likewise resembles the pulpit on its part; it also shows statues at the angles like them; only the panels are lacking there and are transferred to a second border of the fountain.

Finally Vasari further ascribes to Niccolo the sculptures above the left side doorway of the west facade on the Cathedral in Lucca, and justly so. In the round arches are the descent from the cross, and on the lintel is represented the adoration of the holy three kings. The descent from the cross is entirely similar in execution to that on the main portal of the Strasburg west facade.

All sculptures of Niccolo have the animated look and the purposeful pose of the Renaissance sculptures, these two chief characteristics, which are wanting to the French and German sisters of the Gothic. In so far Niccolo is the father of the "Renaissance." To combine the beauty of the French and German sculptures with these new attainments was first successfully done by the masters of the early Renaissance.

Niccolo had assistants, his son Giovanni Pisano and Fra Guglielmo. Now did the son and the pupil develop further this so personally colored art? Did everything appear more clearly and decidedly in their works, which one sees in Niccolo's art as an imitation and a fruit of the antique? Or was what Niccolo apparently took from the antique carried further in their creations? Not at all. If one at need can still find anything in Fra Guglielmo, that recalls Niccolo, this is then denied e-

even with the best will in the works of his son Giovanni, to not speak of Andrea Pisano, the pupil of the latter. The works of him appear truly "Gothic", so that no one opposes this. But yet they exhibit an advance, an individuality:- this is the picturesque and reasoned grouping, the pains, the treatment, the bringing of the mental processes into expression, just by the movement and arrangement of the figures, as well as by the development of the faces. One beholds no antique borrowings, no results from Niccolo, but Italian mediaeval individuality. This art produces from itself in organic development the art of Donatello and the art of the so-called Italian early Renaissance. Likewise the ideal of beauty of the early Renaissance is not the antique. Its ideal of beauty is one thoroughly individual to the Italian people in figures as in faces. Since the circle of ideas also without exception came from Christianity and not from the antique, then the few naked cupids and the antique ornament, that surrounds these figures, does not suffice to make this entirely individual art a daughter of the antique. If the antique ornament should prove the "Renaissance", then the Renaissance began already in 1100 in Italy and never ceased. But how one may properly in architecture explain that art as "Renaissance," which fully adopts the entire antique canon of forms, rejecting all reminiscences of mediaeval art -- so far as this may be possible --, then may one also first designate that art of sculpture of about 1500 as Renaissance, which again adopted the antique series of ideas, the antique nudity, the antique figures and the faces of the antique gods, ever bent on the same undertakings.

171. Fra Guglielmo.

Fra Guglielmo executed in 1267 the shrine of S. Dominic in Bologna, and in 1270 the pulpit of S. Giovanni fuor civitas in Pistoja. The first work can certainly be ascribed to him only with the greatest probability; no evidence exists for this. His works exhibit great rounding off on the forms, but great repose, in contrast to Niccolo and his son.

172. Giovanni Pisano.

Giovanni, the son of Niccolo, on the other hand by far excels his father in the rapidity and power, with which he designed and executed his figures. These are also more attractive and

hold the eye more strongly than those of his father. The antique tone of Niccolo has vanished. Giovanni was further busied as architect of the Campo Santo at Pisa (1278), and perhaps also as that of the Cathedral at Siena. During this time he created a great number of statues of "Our dear Lady" (Madonna ?); further in 1301 the pulpit at Pistoja (Fig. 449) and in 1302 - 1311 the former pulpit in the Cathedral at Pisa.

178. Arnolfo di Cambio.

Henceforth the centre of sculpture creations was transferred to Florence. Another assistant of Niccolo was Arnolfo di Cambio, who was later cathedral architect of Florence. His successor in the building of the tower, Giotto, produced about 1334 some reliefs at the base of the campanile, and Andrea Pisano in 1380 the single portal of the Florentine Baptistery.

A principal difference between the Pisan and the Florentine schools is at once apparent to the eye. While Niccolo and his pupils entirely covered the surfaces with a great number of figures, just as shown by the antique sarcophaguses, the Florentine reliefs exhibit but a few personages with an open background. Otherwise these sculptures appear more like the northern than those of Giovanni Pisano; they especially recall the French reliefs in the substructures of the cathedral portals of the 13th century, even in their enclosures! They are the immediate predecessors of Ghiberti, Donatello, Brunellesco and Luca della Robbia, but have lost all antique reminiscences.

If about this time appeared the custom of purchasing and seeking for antique sculptures, then this art of sculpture fortunately was not diverted from the mediæval course found by it. The ogling and flirting with the ancients was a fashion, born of the hatred of Germans and of Italian vanity. The ancient classic authors were zealously studied and cultivated during the entire middle ages, and they were not first discovered again by Italian humanists. But the Italians of that time gave themselves to these studies with the particular coloring, that they regarded themselves as the successors, the posterity of the ancient proud and victorious Romans, who stood so grandly above the hated German barbarians and had subjugated them. Men therefore rejected German names, which had heretofore almost exclusively prevailed in all western Europe. They called them-

themselves, Eneas, Hector, Tullius and Mucius; men sought to escape from the "barbaric architectural style of the ancient Goths"; they had already freed themselves from the hated German emperor and his officials.

The course of Florentine sculpture has been described a hundred times; therefore one may limit himself to a few lines.

174. Orcagna.

Orcagna, the successor of Andrea Pisano, created between 1349 and 1359 in Or S. Michele at Florence the tabernacle with the burial and reception of Maria in heaven. This is the first burial known in Italian sculpture, while already about 1220 it had been so masterly represented on the south transept in Strasburg. The production also continued during the entire last half of the 14th century with some rarity and is without especial charm. Only the new 15th century brought forth a great multitude of creations in sculpture, that were connected with the competition for the remaining doors of the Baptistery at Florence. We saw there Ghiberti and Brunellesco as the principal artists, but Ghiberti's coloring of the art gradually disappeared to give place entirely to the progressive Donatello.

The limits of this Heft forbid any further extension of this Chapter.

Chapter 13. Tombs.

175. Stone Sarcophaguses and Gravestones.

Artistically transforming as always, the middle ages has also expressed its individuality in the tombs. The deceased rests at full length on the gravestone, and it indeed appears that the 11 th century introduced this both monumental, magnificent and appropriate custom. Something similar is found on the lids of Egyptian wooden coffins, and particularly in the reclining figures on Etruscan urns for the ashes.

329 A transition to the mediaeval gravestone is not shown to have existed, by a survey of Grecian and Roman tombs; yet a great sarcophagus was found in Iconium with a reclining female figure on its lid, from the Roman period, that is one of the connecting links. Asia Minor then transmitted this custom to the West, of leaving the deceased in life size to posterity.

Until the 11 th century stone sarcophaguses were in use, consisting of receptacle and lid, such as the Romans have left in such numbers in Germany; in these sarcophaguses lie the corpses; they were also placed in niches. Particularly in Italy, it remained a favorite custom to deposit the bodies of saints in such sarcophaguses over the doorways of churches.

After the end of the 11 th century, the lid of this stone sarcophagus sunken in the floor then appears to be adorned by the skilfully wrought figure of the deceased. We see this on the tomb of Rudolf of Swabia (died 1080) in the Cathedral at Merseburg and on the grave slabs of the abbesses in the Castle Church at Quedlinburg, which belong to the middle and end of the 12 th century. In like manner may be seen buried the temple lords in the Temple at London, whose grave slabs originated shortly after 1200.

176. Raised Tombs.

Besides these were developed the raised tombs. The Plantagenets at Fontevrault, who died shortly before and after 1200, have received such raised tombs; the corpse usually lies not in the sarcophagus but beneath the pavement of the church. The most masterly one among the early tombs of Germany is that of Henry the Lion and his wife Matilda in the Cathedral at Br Brunswick (Fig. 432).

These raised tombs were yet more lavishly treated by canopies,

that covered them. Thus equipped is already the tomb of Henry, Count Palatine, in Laach, the founder of that monastery (Fig. 450 ¹⁶²); the canopy with six columns is older than the raised tomb; it originated about 1200 and is very skilfully constructed. While the later canopies are mostly held together by visible anchors, the architect here set the columns inclined and thus opposed the thrust of the arches. The tomb itself is only later, and indeed as an inscription formerly stated, was erected under an abbot Theodoric. Since there were two abbots of this name, there remains a doubt as to the one under which this raised tomb originated; probably under the second abbot of that name between 1256 and 1295. The Margrave rests his feet on a lion and on an eagle, evidently heraldic beasts, since they are repeated on shields at his head. The feet of the deceased usually later rest on a dog. The Margrave likewise holds in his right hand the model of the church as its founder.

Note 162. From Bock.

Well known are also the tombs of the Scaligers at Verona with their canopies. The raised tomb represented on the adjacent plate is that of Mastino II della Scala, who died in 1351.

The tomb of Casimir the Great (died 1370) in the Cathedral at Cracow exhibits a superstructure on 8 columns (Fig. 451 ¹⁶³); it has both a splendid and a religious effect.

Note 163. From Essenwein, A. Die mittelalterlichen Kunst - denkmale der Stadt Krakau. Nuremberg-o-J.

329 177. Stone Sarcophaguses on Corbels.

The custom was widely extended in Italy, of placing the stone sarcophaguses on corbels against the wall of the church, then covering them by canopies and finials for greater richness, and which projected from the wall.

One of the richest tombs of the vanishing middle ages is then that of the emperor Frederic III in S. Stephen at Vienna (see the adjacent plate); this was erected in 1467 by Nicholas Lerch, an architect from Strasburg, whom the emperor called to Vienna.

The grave slab of the emperor Frederic rests on a high substructure, that is ornamented by freely wrought and rich representations; around it extends a massive railing of tracery; the emperor is represented in full imperial regalia in the most lavish manner; the monument was only finished in 1518 by Michael

Dichter.

178. Materials of Tombs.

We have so far examined the form of the tombs, and it remains to classify them according to the materials and the art industries by which they were produced.

In general, the tombs are chiseled from ashlars and richly painted. If marble could be procured, it was preferred. Quite early, men also had recourse to bronze. Thus the grave slabs of two bishops are of metal, which are preserved in the Cathedral at Magdeburg. The oldest is apparently of wrought copper and shows a little figure at the feet of the bishop, pulling a thorn out of its foot; the later slab is of cast bronze and is very beautifully modeled. Both show the bishop at full length; they date from the 12 th century, the older from indeed the first half and the second from its close. But the oldest cast slab still preserved is apparently that already mentioned as that of the anti-king Rudolph of Swabia (died 1080) in the Cathedral of Merseburg; it is very confusedly modeled and evidently dates from about 1080. In France only the beginning of the 13 th century has left two bronze tombs of the Bishop Eyrard de Fouilloy (died 1223), and of Godefroy in the Cathedral of Amiens.

Such tombs were even enameled in France. Before the "Great" revolution, there was to be found at the left of the high altar of the Cathedral at Beauvais the tomb of Bishop Philip of Dreux (died 1217) of copper, the figure in life size and the whole entirely enameled; for this purpose, the figure was naturally made in separate pieces.¹⁶⁴

Note 164. From Viollet-le-Duc, E. Dict. Rais. du Mobilier français, etc. Vol. 2. pl. 47. Paris. N. D.

Besides the tombs that exhibit the human figure in the complete round, there are also in bronze those which show it in but half relief, or only in very low relief. Thus at the close of the middle ages one of the most masterly slabs is that by Peter Vischer in Römheld for Count Hermann VIII von Henneberg and his wife Elisabeth (died 1507), daughter of Albert Achilles of Brandenburg. (Fig. 452).

In countries in which cut stone is hard to obtain and the cost of bronze forbade its use, grave slabs of terra cotta are

found in low relief or in a kind of incised work; thus in the Cathedral at Branderburg. These grave slabs are composed of several pieces, since clay scarcely permitted the production of an entire slab. There indeed occur tombs with the figure in the entire round in terra cotta. The tomb of Duke Henry IV (died 1290) in the Kreutz Church at Breslau must be of terra cotta; it is colored, wherefore the material is hardly to be determined.

Finally, in many places the incised metal plates were great favorites, especially on the Baltic coast. Lubeck, Stralsund, Dantzic, etc. contain grand examples, and in northern France the country around Chalons-sur-Marne; rich tracery crowns and encloses the figures; the backgrounds are covered by beautifully designed patterns, and the figures are drawn with grand and firm lines. In Lubeck the two most prominent grave slabs are those of the two bishops Burchard von Serkern (died 1317) and Johann von Mul (died 1350) in the Cathedral, and those of the burgomaster Johann Lüneberg (died 1461) and of his son (died 1474) in the Church S. Catherine. Likewise in the cathedral cloister at Hildesheim is to be found a beautifully engraved grave plate of Bishop Otto von Braunschweig (died 1279), who added the Woldenberg to the bishopric; therefore he holds this castle on his arm.

The simplest grave stone of this kind is naturally that on which is incised the figure in a slab of cut stone. In this manner is executed the gravestone of Libergier, the architect of S. Nicaise at Rheims, which is now placed in the north transept of the Cathedral.

Chapter 14. Equipment. (Church Furniture).

a. Altars.

179. Purpose and Construction.

The sacred rites require a table in memory of their institution; this table is the altar. Therefore the large top slab is termed the "mensa" (table). This should be composed of a single large stone.

Every altar is and must be consecrated. As a permanent token of this consecration, five crosses are incised in the upper surface of the mensa.

Since during the terrible and continuous persecutions, the Christians with their divine service fled to the cemeteries, the catacombs, and were there compelled to perform the sacred rites over the tombs of the martyrs, it became a custom and a rule, when the Christians could again set up their altars publicly, to place beneath or within the altar the body of a martyr. This might be done in a crypt-like vault beneath the altar, as shown by the plan of S. Gall, or the saint was laid in the substructure of the altar (stipes, trunk); then this base had an opening, the "fenestrella" (little window), as still shown by the altar in the "old Cathedral" at Regensburg. The remains of the saint were later deposited in splendid shrines behind and above the altar. We find this especially in the Romanesque and early Gothic periods. Thenceforth and today a small cavity is arranged in the mensa, the relic table, and in this is placed a fragment of a saint, together with a document relating to the consecration; this opening is closed with a small piece of stone, which receives a fifth cross of the consecration.

By these gradually changing customs resulted the forms of the altar, which either show the mensa on small columns or on a solid substructure.

180. Slab on small Columns.

One of the oldest and finest altars with small columns beneath the mensa, that has been preserved in Germany, is that in the Cathedral at Brunswick; Henry the Lion brought it from the Holy Land in 1172. Beautifully modeled capitals of bronze ornament the columns; the top slab is of a polished foreign syenite.

181. Slab on a solid Base.

In those altars possessing a solid base, this is frequently covered with lavish splendor. Thus in S. Ambrogio at Milan has been preserved the Pala d'Oro (golden covering), that Archbishop Angilbert (825) caused to be made by a goldsmith Vuolvin. The figures are very skilfully modeled and raised. How honorably the archbishop treated this artist is shown by the fact, that Vuolvin not only represented the archbishop as the maker of the gift, but likewise himself as a raised figure on this covering. Over the archbishop is :-- "Angilbert, lord of S. Ambrosius;" above the artist is :-- "Vuolvin, master workman of S. Ambrosius."

Frequently only the front side of the substructure was so splendidly adorned; this covering is then termed the antependium. Many such have been preserved. Well known is the altar given by Henry the Saint (1008) to the Minster at Aix-la-Chapelle, whose principal parts are still well preserved, even if it has suffered alterations.

182. Altars with Reredoses.

Since in the primitive period of Christianity the priest stood behind the altar, and because he must there look toward the East, the altar space thus lay at the western end of the church and devotional assembly; the churches thus had the altar arranged at the West. Therefore the altar had no reredos or other additions.

Later, perhaps when men placed the shrine of the saint behind the altar, the priest stepped to the other side of the altar and turned his back to the congregation. Christian churches have since been arranged with their altar spaces toward the East, and a reredos is placed behind the altar.

This reredos (retable) still here and there remains from the 13th century. They are of wood, stone, or of hammered gold and silver like the antependium. That they were already in use for several centuries is proved by the numerous documents, that tell of the giving of such altar slabs, richly decorated with gold, silver and precious stones, particularly in the time of the Carolingians.

One of the best known of these rich reredoses in wrought gold and silver must be that given by the emperor Henry the Saint

to the Cathedral at Basle, and which is now to be found in the Museum Cluny at Paris; it must be made of pure gold. That the little columns were no longer of the time of Henry must be clear; perhaps the arches were first made with them, indeed about the end of the 12 th century. These figures themselves are of quite excellent work, so that one is amazed by the high position of the sculpture of Germany about the year 1000, since the little that has been preserved from that time until about 1180 scarcely merits mention.

One of the most beautiful altars of the classic time of S. Ludwig (1223-1270) is that in the chapel of the Virgin in the Abbey Church of S. Denis near Paris (Fig. 453 ¹⁶⁵). It was indeed first restored by Viollet-le-Duc from the ruins, that remained from priceless art works after the great revolution. Fortunately, drawings of a Jean Perçier existed, who had sketched in S. Denis just after the destruction. The reredos and the altar slab are of lias stone, and the supports of lamps at the side are of gilded wrought iron; all is richly painted and gilded. It is uncertain, whether one should most wonder at, the mediaeval creation or the masterly drawing of Viollet-le-Duc, that is represented in Fig. 453.

Note 165. From Viollet-le-Duc. Vol. 8. p. 42.

A second example of these model works is the altar of S. Eustace at S. Denis near Paris (Fig. 454 ¹⁶⁶); the shrine of the saint is entirely separated from the reredos.

Note 166. From the same, p. 86.

The most splendid example of such a shrine for relics is possessed by the high altar of the S. Chapelle in Paris (Fig. 455 ¹⁶⁶); this was constructed by Louis the Saint for the preservation of the crown of thorns; hence the most elaborate style of the altar structure. The original altar, that apparently originated between 1240 and 1250, exists no longer; the platform behind it has been restored from the remains; it must date from only the end of the 13 th century. The entire structure and the winding stairs are carved in wood and finished with rich painting and gilding.

At this altar the holy sacrament is placed in the case, that at the middle before the lower pointed arch. The sacrament was apparently kept in such cases in the early period, which

generally took the form of the dove - the Holy Spirit - and hung above the altar. Only at a later time, after the 18 th century, were arranged special tabernacles. More on this later.

335- 188. Folding Altars.

The reredos developed into the so-called altars in Germany, including the Netherlands.

The chief representation, whether painted or in relief, was covered by two wings, that could be opened when desired and served to extend the middle representation. The backs of the wings were usually only painted, so that by opening or closing of the altar, the greater or lesser solemnity of the divine service could be expressed.

These folding altars were developed to considerable dimensions. Especially in the Mark of Brandenburg and in the adjoining lowlands, the communities between 1500 and 1520 had such altars erected in infinite number, from the least to the greatest dimensions; they have remained until our time. The backgrounds are mostly richly gilded; damask patterns are frequently engraved in the gilding. These are evidently all of woodwork, frequently coated with a mixture of chalk and glue and polished before it was painted or gilded; the more delicate modeling is evidently only done with the spatula. The figures are likewise richly gilded and strongly painted with blue, red and green; brown and indigo occur later; white and black were mostly employed for the flesh and for outlines.

The coloring of these altars is quite unsurpassed and is priceless and true art in comparison with the products of modern workshops for sacred things. When will the clergy give to these abortions of the last half of the past century their well earned discharge? A more general neglect by the educated classes in the knowledge and design relating to the formative arts is inconceivable, than may be observed for fifty years past.

A folding altar yet belonging to the high Gothic period is preserved in the Liebfrauen Church at Oberwesel (Fig. 456 167); it was consecrated in 1381; the reredos evidently existed at this consecration. "In the year of the Lord 1381. On the annunciation of the glorious Virgin Maria. This high altar was consecrated in honor of the most glorious Virgin Maria and her

mother Anna. With the high choir,¹⁶⁸, says a document, which is let into the north side of the choir under glass. The 14 th century is the driest and most tasteless of the entire middle ages; to it corresponds this mysterious distribution of equally important little figures, much too small.

Note 167. From Beck.

Note 168. From Jahrbücher des Vereins von Alterthumsfreunden im Rheinlande. Heft 61. p. 184. Bonn. 1877.

Similarly ugly is the reredos of the high altar in the Cathedral at Cologne.

On the folding altars about 1500, the greatest painters and sculptors were engaged. Thus a very well known altar is that by Veit Stoss in the Maria Church at Cracow representing the reception of Maria in heaven (Fig. 457). The same scene is treated in the wonderful folding altar of Oreglingen-on-Tauber (Fig. 458).

184. High and fixed Reredos without Wings.

There was likewise developed the high and fixed reredos without folding wings. A side altar from Kalkar (Fig. 459 ¹⁶⁹) affords one of the most luxuriant and richest examples.

Note 169. From Aus'm Weerth.

The adjacent plate is the representation of a wood engraving of the 15 th century, that represents the drawing of a reredos for a high altar, in which niches for statues are provided below as well as under the topmost finial. The verticals and tracery of this airy creation are especially graceful and would be made much too massive today.

185. Canopied Altars.

A special kind of altar existed since the primitive period, the ciborium altar, or the altar with a canopy. Usually four columns stand around the altar, which are connected by arches and support a cross vault. It is assumed that the name "ciborium" is derived from the sacrament (cibus = food), which was suspended from the vault in a dove. The word is "cimborio" in Spanish.

The high altar in S. Ambrogio at Milan, which bears the Pala d'oro of Angilbert, is covered by a canopy from the beginning of the 13 th century.

Figs. 460 and 461 ¹⁷⁰ exhibit the rather tasteless creations

On the 10th of June, 1900, the following was received from the
Hon. Secy. of the Navy, Washington, D.C.:
The following is a list of the names of the officers and crew of the
USS Albatross, who were on duty at the time of the capture of the
USS Albatross, on the 10th of June, 1900, at the mouth of the
Columbia River, Oregon.

In the case of the "Gator" as preserved at the University of Chicago, the body was covered with a black cloth and the head was covered with a white cloth.

136. Lykes and Jernstedt.

(continued)

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of the late Gothic in S. Stephen at Vienna; this is of out stone, and since the arches thrust, the four columns must nearly always be held together by ties.

In the Cathedral of Gerona is preserved such a canopy, apparently covered with wrought silver plate and dating from the 14th century.

186. Pyxes and Tabernacles.

At all these altars, the holy sacrament was placed outside the altar and in a special tabernacle. In the Cathedral at Brandenburg is still preserved an early Gothic tabernacle from the end of the 13th century, carved in wood and richly gilded. Unfortunately these great rarities are not sufficiently preserved. The late Gothic constructed the tabernacle of the richest filagree work in cut stone and permitted it to rise high beneath the vaults. Two examples of such tabernacles are given by Fig. 462 (Griethausen near Cleves ¹⁷¹) and 463 (Feld Church in Vorlariberg ¹⁷²); the latter is wrought in iron.

Note 171. From Aus'm Weerth. Pl. 6.

Note 172. From Mitt. der Central-Commission etc.

Since the Council of Trent, the receptacle for safekeeping of the holy sacrament must be placed on the altar and is called a tabernacle. Above it is required the expositorium, a free space in which may be set the monstrance; there must always be a crucifix. Thereby is given a programme for the high altar, entirely different from the mediaeval one.

187. Dimensions.

The height of the altar table is about 3.28 ft., the depth, exclusive of the ledge for candlesticks, is 1.97 ft., the length of side altars is 4.92 ft., or for high altars is 13.12 ft. or more.

b. Choir Stalls.

188. Diversity of Choirs.

The cathedral canons, the foundation clergy and the monastic communities have the duty of singing hymns at certain hours of the day and night. For this purpose they required long rows of stalls facing each other, that were closed against passage and disturbing spectators, and indeed at the sides by the choir enclosures and by the rood screen at the west.

The clergy of the bishop indeed at first sat around his thr-

throne in the apse, the tribune. To such a primitive arrangement apparently corresponds still the seats in S. Clemente at Rome and in the Cathedral at Torcello.

The singers were placed in the nave; this is yet shown by S. Clemente. The low enclosure of the choir which surrounds this space bears the name of John VIII. In Spain the choir clergy still sit with the subdeacon and the singers in the nave. The inserted "coro" (choir) disturbed the entire interior of these churches, since it rose very high. In other countries the choir stalls were chiefly moved back before the apse in the longitudinal choir. If this choir alone did not suffice for the placing of many seats, it was extended to beneath the crossing. In order to there obtain sufficient light for the rows of stalls, the open crowning tower was erected above the crossing, and to which is likewise termed "ciborium" (ciborio in Spain) and also lantern. Thus also says the Abbot Menno of Werum (1228: -173

Note 173. See Matthei veteris aevi Analecta. Menno's Chronicon Abbatia III in Werum. Vol. 2. p. 132 et seq.

"At first namely men had to construct a ciborium in the form of a tower between two transepts of the church, whose ceiling was placed so high above the roof of the church, that the windows lighted the choir, since extended above the roof."

It was more beautiful and consistent, when the longitudinal choir was made so large as to suffice for receiving the choir stalls. The English have almost always proceeded in this manner in their cathedrals and monastery churches; hence their so surprisingly long churches. The rood screen with the altar for the laity then closes this longitudinal choir next the crossing. The windows of the crossing tower light the area directly before this altar, and the transverse aisle as well as the nave remain in their entire extent open to the laity. If one passes through the English churches from the western end as well as from their transepts, the charmed eye can at a glance view and enjoy these colossal interiors. This arrangement is also preserved by the Cathedrals of Halberstadt and of Magdeburg, as well as the Church S. Johann at Herzogenbusch (Fig. 464).

As already stated, this is the noblest and most proper solution; but it requires extremely elongated churches, and the

means for these have nearly always been wanting in Germany. On the contrary, England must already at the time of William the Conqueror have possessed such unusually great wealth - and this was indeed a chief reason for the conquest - that in each city of the middle ages it created the most extensive churches of the entire world. This proved by Lincoln, Peterborough, Ely, York, Durham, Lichfield, Worcester, Canterbury, Wells and Salisbury.

189. Choir Stalls.

The choir stalls generally consist of several rows of seats rising above each other. The rearmost row is protected by high backs, which terminate in canopies. This may be seen in the choir stalls at Maulbronn, which are otherwise of little beauty (Fig. 465 ¹⁷⁴). Since the choir prayers required standing for a long time, the seats are hinged, so that when turned up, they have a smaller seat on their upper edge, the *misericordia* (compassion), to afford support to the older and weaker brothers while standing. Therefore back and arm rests were also arranged in the strongest and most appropriate manner for standing.

Note 174. From Paulus.

These choir stalls are mostly decorated by the richest carved work; particularly the *misericordias* are frequently the places for scoffs and freaks. Scarcely any remain from the Romanesque period. In Ratzeburg remain to us some fragments of such choir stalls from the end of the 12th century. Wilars de Honecourt drew two such series in his Sketch Book about 1240; one is very rich and especially beautiful. In Xanten on the lower Rhine is to be found in S. Victor a series of choir stalls of like form (Figs. 466 to 468); these are the most beautiful early Gothic choir stalls, that remain in Germany; the drawing does not reproduce the beauty of the modeling. In France, that at Notre Dame de la Roche sought to excel it.

Note 175. From Aus'm Weerth. pl. 19.

These scrolls of the sides of the great choir stalls are a far too seldom employed model for the most varied solutions of Gothic civic architecture.

In the choir of Cologne cathedral remains both splendid and beautifully modeled choir stalls, which originated indeed sho

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Vote 177. From ...

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shortly before the consecration of the choir (1822; Figs. 469 to 472 ¹⁷⁶); particularly the figures are also modeled in the most animated movement, with a mastery of the human form unusual on the lower Rhine, so that one may well think of the Strasbourg school. A simple stall of the later time is presented by Fig. 473 ¹⁷⁷, from the Heiligkreutz at Cracow.

Note 176. From Schmitz.

Note 177. From Essenwein, A. Die mittelalterlichen Kunstdenkmale der Stadt Krakau. Nuremberg. n.d.

One of the richest and most marvellous series of choir stalls is that of the Cathedral of Amiens. It exhibits 116 seats and was executed by two cabinet makers, Alexander Heret and Arnault Bullin, in 1508-1522 under the supervision of Jean Turpin; the "carver of images" (sculptor) was Antoine Avernier. These are entirely constructed of oak, that is still untouched by wood worms.

190. Lectern.

The lectern also belonged to the furniture of the choir. Those fixed in place were made of bronze or stone. It was generally the eagle of S. John, that bore the book on its extended wings. The eagle lectern in this form in the Minster at Aix-la-Chapelle is well known.

In the Cathedral at Naumburg has been preserved a lectern of stone with the most masterly treatment. A youthful subdeacon supports the book board, that itself rests on a stem decorated by foliage; the color decoration is still to be seen; the clothing is colored red. This gem of early German Gothic sculpture dates from the time about 1260 and it so far stands unprotected in a corner, exposed to every mutilation. ¹⁷⁸

Note 178. See Hasak, N. Geschichte der deutschen Bildhauerkunst im XIII. Jahrhundert. Berlin. 1899.

The same idea is frequently repeated. Thus is to be found in Heiligenstadt a similar and certainly ugly lectern.

But from Ebersdorf near Lichtenwalde in the Hartz mountains ³⁴⁷ on the contrary, there remains such a lectern with a subdeacon from the time about 1500 (Fig. 474 ¹⁷⁹), that almost equals the Naumburg lectern.

Note 179. From Wankel, O. Sammlungen des Königl. Sachsenischen Altertumsvereins zu Dresden. Dresden. 1900.

When the same time and a similar event's hand is an angel
as a legend from the same source; both are now to be found
in the collection of the National Museum, Washington.
in at present.

There is also a small fragment of the same legend, which
is now in the collection of the National Museum, Washington.
The fragment is a small piece of paper, and the legend is
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The fragment is a small piece of paper, and the legend is
very of the same in German (about 1800); the printed columns are
a favorite source of the ending in the century.

From the same time and a similar artist's hand is an angel as a lectern from the same church; both are now to be found in the collection of the königliche Sachsische Altertumsverein at Dresden.

Besides these rich modes of treatment are also simpler ones. Thus Fig. 475 ¹⁸⁰ exhibits a lectern from the Cistercian Monastery of Ossag in Bohemia (about 1200); the knotted columns are a favorite caprice of the ending 12 th century.

Note 180. From Mitt. der Central-Commission etc.

191. Rood Screen.

The area in which the choir stalls stood, as previously stated, was enclosed next the nave or western side by a wall, the rood screen. The name (lettner) indeed is derived from "lectorium" (reading desk), since from it were read the gospels and epistles. Usually winding stairs lead up to it, and at top is provided a small gallery.

Before this rood screen was placed the altar for the parish divine service for the laity. Then two doors at the right and left led into the choir interior. If a doorway was placed at the centre, two altars were arranged on the right and left.

One of the oldest rood screens, that has been preserved in Germany, is that at Maulbronn (Fig. 476 ¹⁸¹). It is very massive and originated about 1150. Since the Maulbronn Church was a monastery church, which at the time of the erection of the rood screen contained a numerous community, the rood screen is placed far forward in the nave in order to enclose sufficient space.

Note 181. From Paulus.

Not much later, but considerably richer is the rood screen in the Monastery Church at Wechselburg (between Leipzig and Chemnitz), even if it no longer stands in its original location. It is well known by its sculptures and dates from about 1190.

In the Cathedral at Naumburg is preserved the old Romanesque rood screen before the eastern choir in its original place.

Before the western choir there stands an early Gothic rood screen of the time about 1270 with its very famous sculptures on the upper railing.

In Gelnhausen remains in the Parish Church a very beautiful

the same time, the following is a list of the names of the persons who were present at the meeting.

The first part of the list is the list of the names of the persons who were present at the meeting.

The second part of the list is the list of the names of the persons who were present at the meeting.

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The ninth part of the list is the list of the names of the persons who were present at the meeting.

The tenth part of the list is the list of the names of the persons who were present at the meeting.

The eleventh part of the list is the list of the names of the persons who were present at the meeting.

The twelfth part of the list is the list of the names of the persons who were present at the meeting.

The thirteenth part of the list is the list of the names of the persons who were present at the meeting.

The fourteenth part of the list is the list of the names of the persons who were present at the meeting.

rood screen with a relatively spacious gallery; it must have originated about 1250.

About 1280 is the date of the rich rood screen of S. Elisabeth's Church in Marburg.

A beautiful rood screen of the high Gothic period is preserved in the Foundation Church at Oberwesel (1381; Fig. 477¹⁸²).

Note 182. From Bock.

From the late Gothic time still remain the very picturesque rood screen in the Cathedral at Magdeburg (1458) and in that at Lübeck.

347 Of particular beauty is the view afforded by the rood screen in the Cathedral at Halberstadt (1510).

192. Triumphal Crosses.

It was a custom after the Early Christian period to suspend a great triumphal cross within the great arch, that enclosed the altar space next the nave (called the triumphal arch), or to erect it on a beam extending across the nave. Usually Maria and John stand on the right and left. The beam itself was ornamented by statues or busts of the apostles. Generally reliquary cases were also placed on this beam. That this arrangement is one of the most picturesque conceivable is clear. If it occurred in combination with the rood screen, as generally, then was produced that wonderful representation presented in Halberstadt Cathedral.

193. Choir Enclosure.

If the space for the choir stalls was not arranged in a walled longitudinal choir, but was surrounded by an ambulatory projected into the crossing or into the nave, as usually in Spain, then it must also be enclosed at the sides and rear. This was done by the choir enclosure.

These have remained from the Romanesque period more frequently than the rood screen, since in the later time it was necessary for the believers to be able to attend the choir prayers or divine service in the bishop's church, as well as in the foundation and monastery churches. Therefore the closed rood screen was removed and replaced by a grille.

352 With the best known and most beautiful choir enclosures of the Romanesque period belong those of S. Michael at Hildesheim; these are so very remarkable, because they show in their lower

parts beautiful figures executed in plaster in half relief beneath canopies. Similar but more perfect representations are to be found in the likewise Romanesque choir enclosures of the Liebfrauen Church at Halberstadt. In the Cathedral and in S. Matthias at Treves, in Brauweiler, in S. Emmeran at Regensburg etc., there are also Romanesque choir enclosures.

Early Gothic choir enclosures are still possessed by the Cathedral at Merseburg. Those of the Cathedral at Cologne must have originated about 1220, and those in the Cathedral at Halberstadt about 1250. In Notre Dame at Paris remain choir enclosures richly decorated by sculptures, which were completed in 1251, according to an inscription.

Among late Gothic choir enclosures are especially prominent those of the Cathedral of Chartres on account of their beautiful and abundant sculptured ornamentation.

c. Pulpits, Baptismal Fonts, Galleries and Organ Galleries.

194. Pulpits.

For promulgating the word of God, the pulpit has been in use since the beginning of Christianity. In the Early Christian churches of Ravenna have been preserved a number from the time of Theodoric the Great (died 526). Thus in the Cathedral at Ravenna is the ambo (pulpit) of Bishop Agnellus; in Ss John and Paul is that of Bishop Marianus (597); one such in S. Apollinaris Nuovo; further the ambo of S. Severus, now in S. S Spirito at Ravenna, and that in S. Agatha there. Likewise in the Cathedral at Murano an ambo remains from that time; others from the 7th century in the Cathedral at Torcello and in the Church della Misericordia at Ancona. From the 8th century date the ambos at Modena, Voghenza (now in Ferrara) and in the Basilica at Nola. In S. Maria at Toscanella is to be found such a one from the 9th century, and in S. Marco at Venice, in Grado and in S. Restituta at Naples are such from the 10th century.⁴²

Note 188. See Rohault de la Fleury, Ch. La Messe. Vol. 3. Paris. 1883-1889.

351 Pulpits were called ambos in that early period. It is assumed that their name came from the fact, that they were added in pairs to the enclosure surrounding the clergy and singers,

for reading and expounding the epistles and the gospels. On the plan of S. Gall (about 820), the pulpit is also termed *ambo* and is drawn as a large circle, while the places from which the gospels and epistles are read are named *analogia*. Therefore the derivation from the Greek "*anabainein*" (to ascend) is more probable. 183

Also after the year 1000, Italy presents a stately series of remaining pulpits. From the 11 th century in S. Marco at Venice, in S. Micchele at Pavia, in S. Stephen at Bologna; from the 12 th in S. Ambrogio at Milan, in S. Clemente at Rome, in S. Maria in Cosmedin and in S. Maria in Aracoeli there; from the 13 th in S. Lorenzo-f-l-M at Rome, in the Cathedrals at Modena and Verona, in S. Chiara at Naples, in S. Cesario at Rome, in the Cathedral at Volterra, in S. Leonardo in Arcetri near Florence, in S. Giovvyni at Pistoja and in S. Bartolomeo there (1250), in S. Miniato at Florence, in the Cathedral at Siena (1266), in S. Andrea at Pistoja (1298), in S. Micchele in Borgo at Pisa (1304) and in the Cathedral there.(1311).

In Dalmatia are to be found well preserved pulpits in the Cathedral at Trau (about 1170) and in the Cathedral at Spalato (about 1200). As examples for most of these pulpits may serve Fig. 478 ¹⁸⁴ from Madonna del Castello.

Note 184. From de Darteln.

177 In Germany there only remains the pulpit in the Minster at Aix-la-Chapelle, that Henry the Saint (died 1024) gave to it; this is richly ornamented with antique carved works in ivory and precious stones, and it exhibits a Gothic foil in plan.

In France remain no pulpits at all from that time and but a few statements. Thus the pulpit was preserved in the Cathedral of Rheims, from which S. Bernard of Clairvaux preached. Judging from miniatures, the pulpits must then have been made of wood and have been portable, like a large chair. In the great legend of the life of S. Hedwig is represented such a wooden pulpit.

195. Support of Pulpit and Stairs.

Only from the late Gothic period remain a number of pulpits in wood and stone. They exhibit only the two possible arrangements, that the pulpit is either supported by one column or pier, or that it is borne by several. The first case is repr-

represented by the pulpits at S. Paul near Bözen (Fig. 479) and at Eggenburg (Figs. 480, 481 ¹⁸⁵). If the internal diameter of the pulpit be not made too great, or at most 3.28 ft., then must one generally adopt the hexagonal plan. For the octagonal, the separate sides become so small, that the stairway cannot terminate at one side with a sufficient width.

Note 185. From Wiener Bauhütte etc.

The stairway is either free and bonded into the pier of the church, or it is built independent from that and supported by small columns and arches. The height of the pulpit should not be made too small. The height of the floor must be at least 6.56 ft.; otherwise it is difficult to understand the preacher.

What richness was developed by the pulpits of the late Gothic period is shown by the design for the pulpit in Strasburg Minster (see the adjacent plate); here the access to the stairway is formed and closed by a special doorway, a procedure followed by the German Renaissance in the noblest manner. In itself, the Strasburg design belongs to the spiritless art works, that aims to substitute the foolish exuberance of numerous too small and confused details for the lacking great idea and the artistic movement. The destruction of this late mediaeval art by the Renaissance was just as well deserved as a salvation from the hands of incapable master workmen and Philistines.

Fig. 482 exhibits a different arrangement. The pulpit is a projection from the wall like a balcony, to which one ascends by a small stairway in the wall; a little oriel window affords space and light. This charming creation is to be found in the refectory of S. Martin des Champs at Paris; it dates from the glorious time of the 13 th century.

Note 186. From Viollet-le-Duc. Vol. 2. p. 410.

196. Fonts.

The administration of baptism according to the modern custom of only moistening the head appears to have come into use in the course of the 12 th century. At least the baptistery churches disappear at the beginning of the 13 th century and fonts are introduced everywhere. A deep bowl on one foot is its basal form. Since the baptismal water was consecrated only once during the year, it was kept in the font. It contained a metal bowl, the baptismal shell; into this flowed the water at e

each occasion for its use. The whole was generally covered by a rich lid.

346 The font from the Parish Church at Andernach (about 1200; F
357 Fig. 488¹⁸⁷) represents a very favorite kind on the Rhine and in Westphalia, that was made of cut stone in the 12th and during the first half of the 13th centuries with the most varied changes. The stem has its angles so turned around, that the clergy might not be obstructed by the small capitals in coming to it.

Note 187. From Bock.

In simpler solutions the bowl stands alone on the foot. This support is frequently formed of animals and cowering figures. Such is the font in the Baptistery at Parma, which indeed was executed by Antelami (about 1180; Fig. 484).

Fonts were also commonly cast in bronze. One of the best known and richest stands in the Cathedral at Hildesheim (about 1200; Fig. 485).

The font from the Reinold Church at Dortmund (Fig. 486¹⁸⁸) shows the favorite early Gothic form transferred into late Gothic. The inner beaker form is also commonly employed alone.

According to the inscription, this Dortmund font was cast in 1469 by Johann Winnenbrook; it is 3.67 ft. high and 3.75 ft. in diameter at the top.

Note 188. From Ludorff, A. Die Bau- und Kunstdenkmäler von Westfalen. Münster. 1894.

187. Galleries.

The galleries serve to increase the space in the church or nave to fulfil other definite purposes. In many countries, the galleries, that receive the singers and the organ are mostly placed at the western end of the church, and are also termed choirs. The appellation of "doxal" has been retained in Cologne.

Galleries existed in Germany since the early Romanesque period. They are not found at all in England.

They were either vaulted or constructed of wood. A charming example of such a wooden gallery is presented by the Church at Pipping (Fig. 487¹⁸⁹).

Note 189. From Wiener Bauhütte etc.

188. Organs.

Theophilus already describes the construction of the organ

is the "Gymnosperm" which is the only one of the group which is not a tree. It is the only one of the group which is not a tree. It is the only one of the group which is not a tree.

(Gymnosperm, 1877)

There are two species of the genus in the

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in his "Diversarum Schedula." Organs were in use from an early time, but only in small dimensions. In 1292 it was stated as follows, concerning an organ for the Strasburg Minster. (See original text).¹⁹⁰

Note 190. See *Ellenhardi Argentinensis Annales in Monum. Germ. Hist. Script.* 17. p. 102. Hanover. 1861.

Only toward the end of the 15th century did organs increase to the sizes common today, and thus originated the great organ cases. Therefore organ cases in Gothic forms scarcely occur; one of the few remaining is presented in Fig. 488 193.

Note 191. In *Geschichte der Stadt Rom. Stuttgart.* 1876. Vol. 1. p. 208.

Note 192. *Procopius De Bello Persico.* Rome. 1509. Vols. 3 and 4.

Note 193. From a drawing by Cuypers.

d. Candelabra.

199. Seven-branched Candelabra.

The seven-branched candlesticks are imitations of the seven-branched candelabrum in the Temple at Jerusalem; that is described in the second book of Moses (Exodus, 37, 17) as follows:-

"He also made the lamp of turned work of pure gold; its shank, upright stalk, its branches, its cups and blossoms were made of it. And there were six branches going from the sides,- three branches from one side, and three branches from the other side. There were three almond cones and flowers upon one branch, a cup and a blossom; and three almond cones and flowers on an alternate branch, a cup and a blossom; thus six branches rose up for the lamps. And upon the lamp four cones like almonds, a cup and a blossom. But there was a ball between two of the branches mutually; and a ball between two of the branches mutually; and a ball between two of the branches mutually; for the six branches that rose up from them. There were balls and branches for them mutually; all the appliances were of pure gold. He also made seven reflectors, and holders, and snuffers of pure gold; a talent weight of pure gold made these, and all the instruments." (Fenton's translation).

We find this seven-armed candlestick represented on the Triumphal Arch of Titus, since Titus made a prize of the candlestick at the destruction of Jerusalem and brought it to Rome.

Whether the candlestick still existed at the taking of Rome (455) by Genseric and his Vandals, who carried away the temple vessels into Africa, as Gregorovius ¹⁹¹ assumes, is neither proved nor probable. For the passage, which might prove this, runs as follows:- (See original text). ¹⁹²

Note 191. In Geschichte der Stadt Rom. Vol. 1. p. 203. Stuttgart. 1875.

Note 192. Procopius De Bello Persico. Vols. 3 and 4. Rome. 1509.

Note 198. From a drawing by Cuypers.

360 The candlestick is not named, and that a talent of gold was saved from Nero and his successors is more than improbable.

361 The candlestick itself, like its representation on the Arch of Titus, was imitated in the middle ages. The oldest seven-branched candlestick, which has remained, is assumed to be that in the Foundation Church at Essen (Fig. 489); around its lower ball may be read the inscription:-- "Abdess Mathilde commanded me to be made and consecrated to Christ." It has therefore been hertofore assumed, that the giver of the order was the Abbess Mathilde II (974-1011), and that the entire candlestick dates from that time. But examination shows that the forms of the candlestick belong to two entirely different periods. The foot with the lower beginning of the stem, around whose ball the foregoing inscription extends, exhibits very ancient forms and originated about the year 1000; but the entire 362 upper part presents a richly developed art, which could only have commenced in the time about 1150. The knobs are very skilfully and richly treated.

Of the same age as this upper portion is the beautiful seven-branched candlestick in the Cathedral at Brunswick, which Henry the Lion had executed after his return from Palestine (1173).

In the Foundation Klosterneuburg has been preserved the upper part of a Romanesque seven-armed candlestick of great beauty of details; its form differs from that of Solomon's candlestick, since the lights do not stand at a uniform height; stems and knobs are perforated and are decorated by very charming Romanesque ornament. It must have originated between 1150 and 1200.

The largest seven-branched candlestick is that in the Cathedral at Milan. It is further distinguished by its masterly or-

ornaments, particularly by beautiful figure representations, which culminate in the adoration of the holy three kings. The relics of the holy three kings were indeed brought to Cologne by Rainald von Dassel after the destruction of Milan by Frederic Barbarossa; yet the veneration of them in Milan appears to have survived this loss. For that the candlestick dates from before 1162 does not properly harmonize with the extremely rich forms; it must rather have been cast after than before 1200.

Well known are also the seven-branched candlestick in S. Gargolp at Bamberg and in the Bustorf Church at Paderborn, as well as the fragments of two candlestick feet in the Cathedral at Prague and in the Cathedral at Rheims, which perhaps belonged to seven-armed candlesticks.

363 200. Altar Candlesticks.

Besides these seven-branched candlesticks, that furnish the light necessary in the vicinity of the altar (Fig. 491 ¹⁹⁴), there are mostly great fixed candlesticks. Of especially large dimensions is a second series of candlesticks of cast brass in S. Victor at Xanten (Fig. 490 ¹⁹⁴), which extends across the entire width of the choir; it is in three divisions. Fig. 490 contains the middle and left spaces, the latter being similar to the right; on the two bases is the following inscription:—"This candlestick was made at Maestricht in the year 1501."

Note 194. From Aus'm Weerth. Vol. 1. Pl. 18.

201. Chandeliers.

Finally the great circular chandeliers were show pieces of the internal equipment of the churches from early times. They particularly served for lighting the choir area. The best known are the great chandeliers in the Minster at Aix-la-Chapelle and in the Cathedral at Hildesheim; they represent the heavenly Jerusalem; the city walls form the great wheel, the gates and towers are the lanterns; on the battlements are arranged the receptacles for the lights, and great bar chains hold together the wheel. They are made of silver and gold and richly ornamented by filagree and niello.

The great circular chandelier in the Cathedral at Hildesheim is 19.69 ft. in diameter; it was begun under S. Bernward and completed under his successor Hezilo, thus between 1020 and 1040. The small wheel was given by Bishop Azelin (1044-1054), but it has been entirely reconstructed.

The great crown chandelier in the Minster at Aix-la-Chapelle was donated by Frederic Barbarossa and his wife, probably about 1165.

From this writing was then developed our modern writing just

304. Origin of German Script.

- Fig. 495. Document of Bishop's German Court at Cologne, 1535.
- Fig. 496. Document of the Council of the City of Cologne, 1535.
- Fig. 497. Document of the Council of the City of Cologne, 1535.
- Fig. 498. Document of the Council of the City of Cologne, 1535.

and show the development of this writing.

However, there is some difficulty in this.

As an example, the German of the 15th century shows a

number of new characters, then in result, become obsolete on a

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305. Origin of French Script.

Document 15. Writing.

Chapter 15. Writing.

202. Kinds of Letters.

Likewise on writing did the middle ages impress its stamp and creat peouliar methods. To examine and investigate the origin of mediaeval writing is of very particular interest at the present time, on the one hand that men might create new methods for themselves, on the other that these written characters have been banned by us today.

365 The writing occurs chiefly in three different forms:-

a. The writing which was daily used in letters, receipts and documents and was carelessly written. We will term it manuscript; it is the mother of our modern written characters (cursive writing).

b. That which was slowly and most carefully written in the books, the ancient codices; the book writing, which is the basis for printed characters.

c. The letters of the inscriptions on buildings, tombs, fonts and the like.

366 a. Manuscript.

203. Round Script.

The writing employed during the middle ages in the Romanesque as well as the Gothic period in letters, contracts and documents, is chiefly what we now call "round writing." Sönnecken has transformed the mediaeval writing into the so-called round writing with high artistic skill and a refined feeling for form. Therefore it comes naturally to him to state, that it is not cursive writing as in the middle ages, but is slowly written as an ornamental lettering. The success of Sönnecken shows how beautiful new creations, rich in results, become possible on a mediaeval basis without illegible distortions. Figs. 492 to 495 show the development of this writing.

Fig. 492. Document of Abbot Hermann of Brauweiler near Cologne.

Fig. 493. Document of the Council of the City of Delitsch.1518.

Fig. 494. Document of Official George Bendorf at Delitsch.1518.

Fig. 495. Document of Elector's Secular Court at Cologne.1535.

204. Origin of German Script.

From this writing was then developed our modern writing just before the thirty years' war. Fig. 495 shows this transformation.

If then one seeks now to make their own writing ugly to a great part of the Germans by stating it to be old monastic scrolls, this is erroneous. It is further the same with all other objections to it.

Our experience as a people and persistence in our German peculiarities has even been the weakest part in Germans. Our ancient ancestors only retained their peculiarities, where they settled in great masses. Everywhere that this has not been the case, they have become Italians, Spaniards, Frenchmen and Englishmen. The modern posterity are no better. They serve everywhere merely as fertilizers of races and cannot retain their language in America at all, while this has still been possible to the French Canadians. Therefore men should highly esteem and strengthen everything peculiar to the Germans, so that the German individuality may be so impressed and made as resistant as possible. The training in the higher schools leaves any increase to the isolation of the Germans. Therefore men should be proud that a German has succeeded in developing a national mode of writing. How would Italians or Frenchmen boast of it! And how strenuously would they hold to it for centuries!

b. Book Script.

205. Origin of Book Script.

Besides the hasty cursive writing was developed the careful book script, naturally at an early time. As may be seen by representations on miniatures and paintings, it was written on a very steep standing writing desk. Therefore one must support the right hand with a second reed in the left, that rested on the paper - about as the painter uses the mahlstick; yet the writer was then seated.

The necessity for crowding the letters as closely together as possible in order to economise space, increased their height and forced their basal lines close together. Here necessity evidently effected the transformation of the form. Then where the peculiar Gothic script originated, that forms the basis of our modern German book print, cannot be discovered. To make it less valuable to modern Germans, many have endeavored to prove that France was the country of its origin. But this has not yet succeeded. All the peoples of the Christian world employed it in the middle ages. Figs. 496 and 497 ¹⁹⁵ present

508. Kind of letters.

This book is composed of letters and still letters, the
kind of which are again divided into two kinds - into those
which are written on parchment or parchment (versals)
- into those, and into those, and into those at the beginning
of the letters or divisions (initials).

507. Details of letters and initials.

The details of letters and initials written with the pen
are the same as the small letters, but they also have
a red line or a red mark as an ornament (see the middle
of the page).

The initial letters of letters are on the contrary
the same as the other in their colors, only red. In 1918.

506. 1918. The letters and initials are written with the pen.
506. 1918. The letters and initials are written with the pen.

506. 1918. The letters and initials are written with the pen.

506. 1918. The letters and initials are written with the pen.

506. 1918. The letters and initials are written with the pen.

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506. 1918. The letters and initials are written with the pen.

beautiful examples.

Note 195. Reproduced from Venturi, A. Storia dell'arte Italiana. Vol. 2. p. 498, 505. Milan. 1902.

206. Kind of Letters.

This book script is composed of large and small letters, the larger of which are again divided into two kinds:- into those that begin every sentence or prominently written word (versals - ~~not verse~~), and into such, that only stand at the beginning of the greater sections or divisions (initials).

207. Initials of Sentences and Painted Initials.

The initials of sentences were likewise written with the pen and the same ink as the small letters; at most they also have a red hair line or a red hook as an ornament (see the middle of Fig. 499).

The initial letters of larger sections are on the contrary made with the brush in bright colors, chiefly red. In Figs. 498 to 502 ¹⁹⁶ are represented such letters made with the brush.

Note 196. Reproduced from Ludorff, A. Die Bau- und Kunstdenkmäler des Kreises Dortmund-Land. Pl. 32. Münster. 1895.

Figs. 498 to 502 are from a Gradual of 1428 in the Cathedral Church at Lunen. ¹⁹⁶

Fig. 503 is from a parchment manuscript of the 12 th century in the Castle Library at Nordkirchen. ^{197.}

Note 197. Reproduced from Ludorff. Pl. 80.

¹⁹⁶ The brush letters at greater cost received volute ornaments drawn with the pen and colored blue, red or otherwise (Fig. 503 ¹⁹⁷) or for greater richness luxuriously painted scroll ornaments and figure representations. The latter were already in use in the Carolingian period in the most splendid manner in western Europe, as in Byzantium.

Fig. 504 is from the bronze doors of the former Liebfrauen Church at Mentz. ¹⁹⁸

Note 198. Reproduced from Kraus, F. X. Die christliche Inschriften der Rheinlande. Part 2. p. 106, 107. Freiburg. 1892.

208. Fracture and Swabian Script.

The small letters are formed in two different ways:-

1. In one retaining straight vertical lines with angular c connecting lines; the proper Gothic script or fracture letters. of the painter.

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2. In a more elegant mode of writing that adds curved connecting lines to the verticals and slightly curves the latter; the so-called Swabian letters.

For both styles of letters the initials diverge in different directions. Those of Swabian script are simpler and clearer, while those of the fracture script ever become more scrolled.

At the time of the invention of printing, between 1450 and 1470, both kinds of script were completely developed, so that their transfer into fixed printed letters occurred.

209. Penmen.

In reference to the penmen of these books, the truly erroneous opinion prevails, that they were always monks. Hence the expression monastic scrolls and monastic script. These books were written by monks and also by laymen, whose calling was this. In his *Geschichte der bildenden Kunst in Böhmen*, Neuwirth has shown that even the monasteries gave out commissions to lay scribes.

210. Invention of Printing.

The invention of printing is the honor of the terminating German middle ages. Germans carried the new art to Italy and France. While at first all works, even in Latin, were printed in Gothic letters, men began in Italy and afterwards in France also to again bring out the Latin letters. Indeed about 1480, everything was already in the full Renaissance, and when this art made its entry into France, men naturally hastened to equal the ancient Romans in their letters as well.

In the Romance countries, the artists soon took up the development of these letters, and thus they came at once to the height of perfection and to the beautiful and elegant letters, that all printers imitate today. But so far as German influence and language extended, the old "Gothic" print was retained, which the German middle ages, the period of the greatest power and the highest might of the Germans, in contrast to the antique and freed from it.

211. Return to the German Print.

And always, when the hatred of the Germans flamed brightly in other nations, who still used the German letters, then were they the first to discard this German script. Thus did the Czechs in the last century and today the Danes. But in England

and America is a change. Influential artists and societies of painters, who cannot dispense with the picturesque effect of the German script in comparison with the cold elegance of the Roman letters, have already produced great English works in the old "Gothic" print; thus the Chaucer's *Ganterbury Tales* by Scott. Clear evidence, that foreign nations find no particular difficulty in reading their language in our print. If Englishmen and Americans again employ the German print for artistic editions, then will the appreciation of their own print also increase in Germany. For unfortunately in wide circles in Germany only that possesses value, which is esteemed in foreign countries. Had not the power of Bismarck been thrown on the scales in favor of German script and German print, then the new empire would have been utilized to dispense with the German S script.

c. Script of Inscriptions on Buildings etc.

212. Inscriptions in Capital Letters.

Inscriptions were executed in capitals until about 1370. First then were the capitals of the Latin alphabet with the variations, that occurred up to the year 1000 (Figs. 504, 505¹⁹⁸); for example the "E" became round. In the 12 th century these letters were rounded more and more; the "M" and "N" became round as well as the "A". About the end of the century, thus at the beginning of early Gothic, they were changed into the beautiful and dignified letters, that are generally known. Indeed the remarkable opinion became general, that the letters peculiar to the early Gothic are Romanesque. They prevailed during the entire early Gothic until late in the high Gothic. Only at the close of the latter about 1370 were they suddenly abandoned in favor of the small letters of the book script (Figs. 506, 507, 509^{199,200}). These small letters then became so tyrannical, that they no longer allowed any kind of large initials, and even numerals were rejected.

Note 198. Reproduced from Kraus, F. X. Die christliche Inschriften der Rheinlande. Part 2. p. 106, 107. Freiberg. 1892.

Fig. 505. Back of the binding of a book of the gospels, which S. Bernward of Hildesheim gave to S. Michael's Church.

Fig. 506. From Cathedral at Trient.¹⁹⁹ About 1250. (P. 122).

Note 199. From a photograph by Unterveger at Trient.

*Fig. 507. Tomb Plate of Bishop Otto of Brunswick in Altar of Cathedral at Hildesheim.*²⁰⁰

Note 200. From a photograph of the Royal Messbildanstalt at Berlin.

Fig. 508. From choir of the Minster at Freiberg.

Fig. 509. Tomb Plate of Bishop Heinrich von Bocholt in Cathedral at Lübeck.

Fig. 510. Tomb Plate of Elector Ernst of Saxony in Cathedral at Meissen.

213. Uncial Letters.

The capitals of the early Gothic (uncials) are very easily legible, and inscriptions made with them are just as clear as those with Roman letters. It is one of the many favorite artifices for bringing the German script into disrepute, to produce inscriptions with German printed capitals, thus with versals, and since nobody can read them, to cry out:- "See on the contrary how clear is the Roman script." The versals were not produced for this purpose and therefore should never be used for it. But the uncials are suitable for it, which are equal to the Roman letters in clearness and far superior to them in ornamental force.

214. Inscriptions in Small Letters.

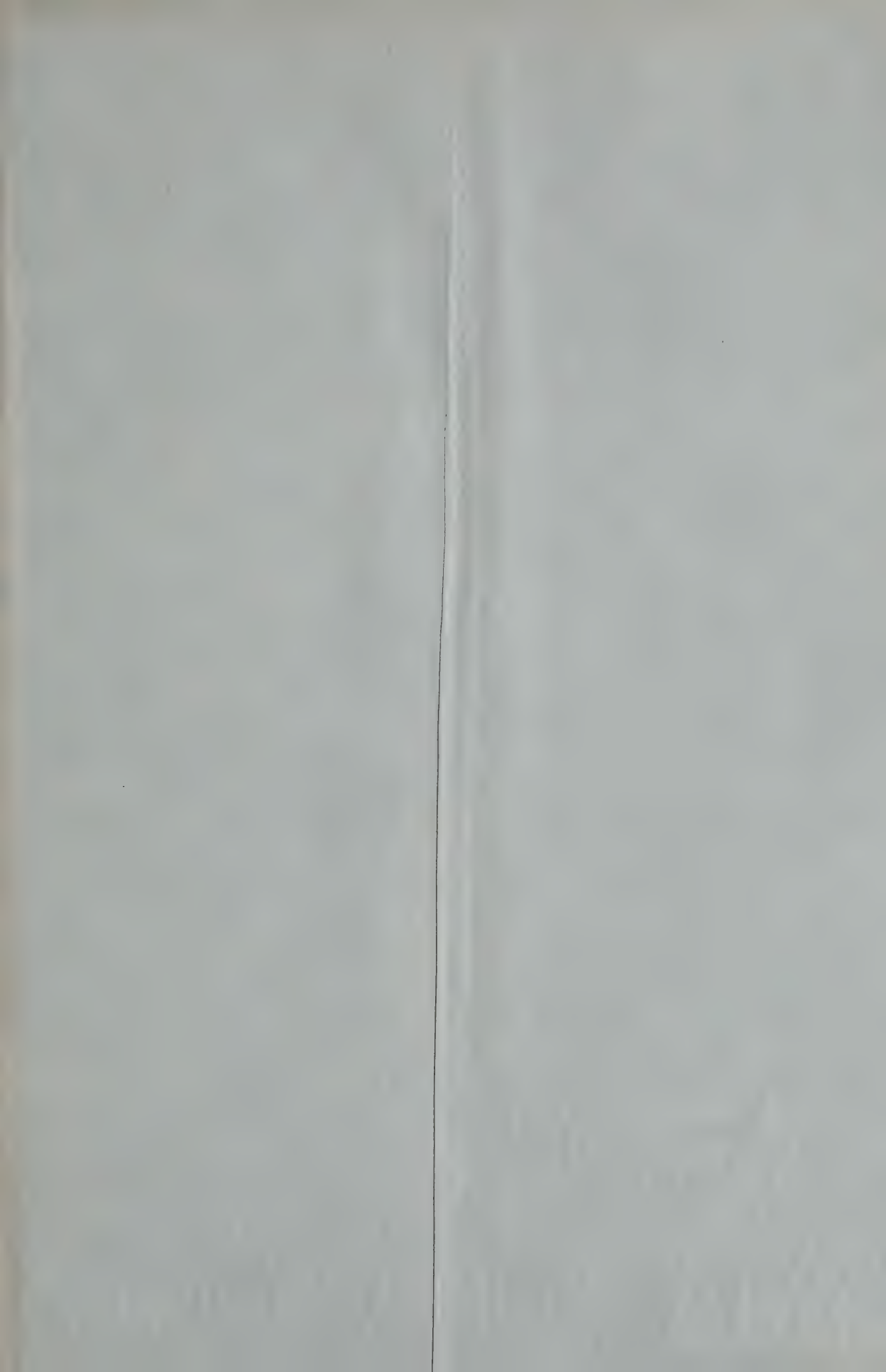
Inscriptions are mostly incised; they are but seldom in relief. This likewise changes with the occurrence of the small letters in the inscriptions. The inscriptions in relief became ever more common; but they did not become plainer. For the inscriptions with small letters, whether incised or in relief, have an illegibility, that is a perfect torment for those, who desire the meaning of the inscription. (Figs. 510, 511).

In spite of all this, it cannot be denied, that the inscriptions likewise have a highly decorative effect, and thus we come again to the hotly contested domain. Men may take mediaeval letters from whatever period they wish, their artistic value stands higher than that of Roman letters.

Fig. 511. Tomb Plate of Duchess Zdena of Saxony in the Cathedral at Meissen.

The End.







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